



Annual Return of Statistics relating  
to Forest Administration in British  
India for the year 1923-24

(With which is incorporated  
the Quinquennial Review,  
ending 31st March 1924.)



CALCUTTA · GOVERNMENT OF INDIA  
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GOVERNMENT OF INDIA.

DEPARTMENT OF EDUCATION, HEALTH AND LANDS.

*Simla, the 2nd October 1925*

FORESTS.

The following review of Forest Administration in British India during the Constitution of five years ending the ~~31st~~ <sup>30th</sup> March 1924 is published for general information. <sup>the Forests.</sup>

At the close of the quinquennial period under review the forest areas in British <sup>Forest area.</sup> India, including the Shan States, amounted to 2,28,850 square miles of which 1,03,449 square miles are reserved, 7,931 square miles protected, and 1,17,470 square miles unclassed State forests, the whole representing 20.8 per cent. of the total area of British India (with the Shan States) or, taking into account only reserved and protected forests, 10.1 per cent.

A small increase occurred in the area of reserved and protected forests under the Forest Department, though, as a set off against this, mention must be made of the fact that 829 square miles in the Punjab were disforested principally for colonization purposes, and smaller areas in Bombay, Madras and the Central Provinces were also disforested. The largest increase in area occurred in Burma—a net increase of 1,400 square miles being reported.

2. The areas surveyed by the Survey of India amounted to 8,563 square miles. <sup>Forest surveys.</sup> mostly on the two inch scale, and 1,065 sheets were published. The cost debited to the Forest Department on account of mapping and publishing and the cost of special surveys, etc., amounted to Rs. 11,19,813, as compared with a sum of Rs. 1,96,781 during the previous period.

The outstanding event under this head was the successful survey from the air of the forests, aggregating 1,350 square miles, in the Delta of the Irrawaddy, during 1923-24. The results are of considerable value and both the Government of Burma and the Survey of India are to be congratulated on putting the matter through.

3. The appointment of Inspector General of Forests was held by Sir George <sup>Organization.</sup> Hart, K.B.E., C.I.E., until 23rd February <sup>Administration and control.</sup> 1921 when he proceeded on leave preparatory to retirement. Sir George Hart retired on the 11th October 1921 and was succeeded by Sir Peter Clutterbuck, C.I.E., C.B.E., the present incumbent.

During the period now being dealt with, the tours of the Inspector General of Forests extended over portions of every province in India, the Andamans and Kashmir. These visits are of great value not only to the local Governments concerned but also to the Government of India: to the former as it enables them to obtain independent and expert advice on professional questions from an officer of ability and much experience, and to the latter as these tours help considerably to maintain a continuous forest policy throughout the country.

Many changes occurred under administration in the provincial forest departments during the five years under review, the principal of which may be mentioned. In Madras, the Presidency was divided into six Conservators' circles, whilst in Burma the territorial circles were increased from 4 to 7 and the special circles of Working plan and Utilization were erected. In this province also the post of <sup>the</sup> Silviculturist was filled in 1920-21 and ten new forest divisions, including the Timber Extraction division, were formed. A Working plan and Research

<sup>1</sup> Note.—The financial year was abolished in 1921 and the financial year adopted for future Annual Forest reports, that for 1920-21 covering the period 1st July 1920 to 31st March 1921. The editor has changed that the present review actually covers a period of only four and three-quarter years.

circle, with a Conservator and five major charges, was created in the United Provinces and in the Punjab a Utilization circle was formed in 1921 and at the same time a post of Chief Conservator was sanctioned for general administration. On the other hand, the two posts of Conservator of Forests, Utilization circle and Working plan circle, Bombay, created during the period, were held in abeyance as a retrenchment measure after having been filled for some time.

With a view to keep the Government in touch with non-official opinion in regard to forest policy in Madras, a standing forest advisory committee was formed in 1921 consisting of non-official members of the Legislative Council presided over by the Hon'ble Member in charge of the forest portfolio. In addition, in furtherance of the policy of enlisting public opinion in local forest matters, committees of local forest officers, members of the Legislative Council and non-official gentlemen were appointed in Madras to enquire into forest grievances in certain districts and submit recommendations.

4. No change occurred in the method of recruitment of officers for this service

*Recruitment and training* till 1920, since when, as a result of the orders  
(a) *Indian Forest Service* passed on the recommendations of the

Islington Commission of 1915, recruitment of probationers for the Indian Forest Service has been made—

(i) by direct recruitment in England and India; and

(ii) by promotion from the Provincial Forest Service in India.

Recruitment in England for direct appointment is carried out under regulations laid down by the Secretary of State for India. Similarly, recruitment in India is carried out under regulations laid down by the Government of India. These latter regulations were issued in 1920, and under them, for the first time, recruits were appointed in India and sent to England for training. This procedure was regularly adopted up to the year 1924. European candidates who had rendered war service were recruited as a special case both in England and India during the years 1919, 1920, 1921 and 1922. Before appointment to the Indian Forest Service probationers selected directly in England and India at present undergo professional training at the Universities in the United Kingdom. In view of the practical difficulties of securing the joint training of European and Indian recruits at one institution in the United Kingdom the question of the place at which Indian Forest Service recruits should be trained in future was considered during the quinquennium. The matter was discussed in both the chambers of the Indian Legislature who recommended that all recruits should be trained in India as soon as the necessary arrangements could be made. Final conclusions on these proposals however were not reached before the close of the period.

The provincial cadres were reorganised between the years 1916—21. The *strength of the cadre.* sanctioned strength of the Indian Forest Service in March 1924 was 399, of which

353 are to be direct recruits and 46 promoted Provincial Forest Service officers. The actual number of officers in service on the 1st July 1923 was 306. Of these 253 were directly recruited Europeans, 5 promoted Europeans of non-Asiatic domicile and 46 Indians. Of the latter 27 were Indians and 19 Anglo-Indians or Statutory natives of India. On the 31st March 1924 the position was as follows—

Europeans (direct) .. .. .. ..	268
Europeans (promoted) .. .. .. ..	9
Indians—Anglo-Indians (promoted) .. .. .. ..	15
Indians (direct) .. .. .. ..	33
Indians (promoted) .. .. .. ..	17
Burmese .. .. .. ..	2
 Total .. .. .. ..	 314

There were 38 probationers under training in the United Kingdom at that time.

Before 1920 the only avenue for appointment to the Indian Forest Service *Indianization.* ordinarily open to Indians was that of direct appointment by the Secretary of

State after selection and training in England. With the exception of two officers (one of whom joined in 1869 and another who was promoted from the Provincial Forest Service in 1907) no Indians entered the service between 1866 and 1910. Thereafter one joined in each of the years 1911, 1913, 1915, and 1919. In 1920, in consequence of the recommendations of the Islington Commission, the Secretary of State sanctioned the following alterations affecting the appointment of Indians:—

- (i) 12½ per cent. of the directly recruited posts in the Indian Forest Service in each province were to be regarded as 'listed' posts to be filled by the promotion of present and future members of the Provincial Forest Service other than those who were then Extra Deputy Conservators, who were also to be promoted at once if qualified.
- (ii) In 1920, 40 per cent. of the vacancies for probationers directly appointed by the Secretary of State in England were to be reserved for Indians if available. (In the result 4 Indians out of a total of 29 recruits or 14 per cent. were so appointed) From 1921 onwards up to  $\frac{40}{25}$  per cent. of the vacancies for direct appointment were to be filled by <sup>Indians</sup> ~~Burmese~~ recruited both in <sup>India</sup> ~~Burma~~ and in England. The question of further increasing the rate of Indianization in the Forest Service was under the consideration of the Lee Commission when the period of the review closed.

In consequence of the recommendations of the Islington Commission the *Conditions of Salary (Indian Forest Service).* time-scale of pay for Assistant and Deputy Conservators of Forests was from July 1919

increased to Rs. 450 a month in the 1st year of service rising by annual increments of Rs. 50 to Rs. 1,600 a month in the 23rd year of service with an efficiency bar at Rs. 850. At the same time rates of pay for Conservators of Forests were altered to an incremental scale of Rs. 1,750—50—2,000, the previous system of payment by grades being abolished. For Chief Conservators an incremental scale of Rs. 2,500—125—2,750 was introduced and the pay of the Inspector General of Forests was fixed at Rs. 3,250 a month.

The rates of basic pay at present in force were brought into effect from 1st December 1919 when the principle of a standard rate of pay, coupled with overseas pay in the case of officers of non-Asiatic domicile, was accepted. From the end of April 1921 the pay of Conservators was raised to Rs. 1,750—100—2,150 and from the same date the overseas pay was also raised by Rs. 50 per mensem in the case of officers in their 7th to 12th years of service.

There was no change in the methods of recruitment and training for the Provincial Forest Service. All Extra Deputy Conservators of Forests who were considered to be fully qualified to hold a major charge were transferred to the Indian Forest Service from 12th March 1920 and now hold 'listed' posts in the cadre of that service. Those not so promoted continue to be styled Extra Deputy Conservators. Except for these unpromoted officers, of whom there were five on the 1st July 1923, the class of Extra Deputy Conservators has been abolished and the service consists of Extra Assistant Conservators only.

Officers of the Provincial Service are now eligible for promotion to 12½ per cent. of the posts in the Indian Forest Service, such promotion being made by local Governments. The strength of the Provincial Service, which is determined in each province by the local Government, was 301 on the 1st July 1923. Consequent on the grant of enhanced financial powers from 1st April 1921 it now rests with the Provincial Governments to determine the pay of the Provincial Forest Service subject to the proviso that the maximum rate of pay of a permanent post shall not exceed Rs. 1,200 a month. The scales of pay of this service were revised in most provinces during the period of the quinquennium.

The question of the decentralization of the training of rangers was a matter that continued to attract attention but (c) *Subordinate Service.* for various reasons, the principal of which was the general financial stringency which existed during the quinquennium, no change in this direction was made.

5. Towards the close of the last quinquennium proposals were formulated for the formation of a Forest Engineering Service and the sanction of the Secretary

*Forest Engineering Service*

of State to the scheme was received in 1919. Seventeen recruits concluded their training in America and Europe and, of these, sixteen joined their appointments in India. The term of appointment of the two Consulting Forest Engineers referred to in the last quinquennial review expired during the period under report but one of them was re-employed as Chief Forest Engineer under the Government of Madras. These two officers accomplished much valuable work but it is to be feared that financial straits and the lack of the provision of funds for considerable capital expenditure, whatever the prospect of heavy returns, will entail delay in carrying out their recommendations.

6. A class was started at Dharwar, in Bombay, in 1920-21 for training rangers, but, on account of financial stringency, it was abolished in 1922-23.

*Education.*

At the request of the local Government, therefore the Government of India agreed to train, at the Forest College, Dehra Dun, with effect from the 1st April 1922, up to a maximum of 10 ranger students annually from Bombay for the next five years. It was therefore found necessary to increase the sanctioned staff of two Imperial and two Provincial Forest Service Instructors at Dehra Dun for the ranger classes by one additional Imperial and one additional Provincial instructor from the 1st April 1922 and by the same number from the 1st April 1923. Subsequently at the instance of the Government of Madras an arrangement was arrived at which insures that the Dehra Dun College and the Coimbatore College do not compete with each other but co-operate in imparting forest education to ranger students. Dehra Dun will train rangers for the Punjab, North-West Frontier Province, the United Provinces, Bengal and Assam, while the sphere of the Coimbatore College will be Bombay, Central Provinces, Bihar and Orissa, Orissa Feudatory States, Central India States and the States of Hyderabad, Mysore, Travancore and Cochin. Consequently the additional posts referred to above are no longer required.

The standard of instruction given at the Bengal Forest School at Kurseong has been raised gradually and the training has increased the efficiency of the subordinate staff to such an extent that 18 of them have attained the rank of ranger while one has been promoted to the Provincial Forest Service. A new course at the Rangoon University for a degree of B. Sc. in Forestry to provide probationers for the Burma Forest Service was started in 1923. In 1921-22 extensions to the Pynnmana Forest School were completed to allow of two classes, English and Vernacular, of 25 students each. Separate training classes were started in each territorial circle in the United Provinces in 1920 but, chiefly from the necessity for keeping down expenditure, these were suspended towards the end of the quinquennium. In Bombay, vernacular forest classes for training foresters and round-guards were started in 1922-23 the course consisting mainly of practical training in the field.

7. The recommendations of the Indian Retrenchment Committee in respect of expenditure on the Forest Department

*Retrenchment*

were fully considered during the end of the

quinquennial period. The principal result elicited was the decision to limit expenditure on the Forest Research Institute and College, Dehra Dun, to Rs. 8,73,000 per annum for 1923-24 and the two following years. The question, which also arose on the Committee's proposals, as to whether the appointment of the Director, Indian Forest Studies in England, should be retained or abolished, pending future arrangements for the training of the Indian Forest recruits, was still under consideration when the quinquennium closed. Similarly the proposals of the Committee, viz., that the control of the Forest Department be vested in a manager with commercial knowledge in the timber industry and that the accounts of the Forest Department be placed on a commercial basis, were also under discussion in 1924. In order to facilitate the disposal of those recommendations a committee was appointed to make recommendations regarding the management of the forests

directly under the Central Government with a view to the introduction of commercial accounts and to ensuring a source of steady revenue. The report of the committee was submitted at the end of the quinquennium and was still under consideration when the period ended.

8. The area over which special protection was attempted shows a decrease <sup>Conservation and Improvement</sup> of about 3 per cent. in 1923-24 as compared with the figure for 1918-19. Small

increases appear in four out of five provinces, Madras alone showing a substantial increase of 592 square miles under this head. In Madras the system of early burning under departmental supervision was introduced for the first time in the Nallamalais in the Kurnool District in 1919-20 and was extended to other districts with much success. The grass is burnt as soon as it is dry enough, the resulting fire being less severe than if it occurred later in the season and doing very little damage. As a result of the adoption of this system in Madras there has been a considerable saving in the expenditure under fire protection which fell from Rs. 1,19,994 in 1918-19 to Rs. 59,929 in 1923-24. The figures for the other provinces show a total decrease of 3,274 square miles, the principal of these occurring in Burma, 1,202 square miles, Central Provinces, 1,137 square miles and Bombay 577. The decrease in Burma was due to the definite change of policy in regard to fire protection which, briefly stated, is to protect from fire only areas, mainly those under regeneration, where it is definitely known that such protection will be beneficial. The area under systematic protection was reduced in the Central Provinces by further extensions of early burning. Still better results would have been obtained but for the abnormally dry season experienced and indifference to the necessity for protection on the part of the people, who rarely rendered prompt assistance in extinguishing fires. In Bombay the decrease is attributed to the exclusion of large areas immune from fire for which no special measures against fire were necessary. The average success of area attempted throughout India, 93.2 per cent., is about the same as the figure for the previous quinquennium (i.e., 95.5) though, as pointed out in the last review, the reliability of the figures is again often open to doubt and the nature of the season has, more often than not, more to do with the measure of failure or success than the protective methods adopted.

9. During the year 1923-24 over 13,300,000 animals were provided with grazing <sup>Grazing</sup> in State forests of all classes and out of this number no less than 4,800,000 grazed

free. The figures for 1918-19 were 13,300,000 (5,300,000 free) and for 1914-15 14,300,000 (4,500,000 free). The improvement mentioned in the last review as regards the number of goats and sheep admitted to the forests has unfortunately not been maintained as there has been an increase of nearly 500,000 over the figure for 1918-19. There is nothing of special importance to record under this head, the figures quoted merely going to show that the forests as a whole have as yet obtained little relief from this heavy burden. In Madras with the extension of the forest village and *panchayat* (village council) systems, the villagers have begun to evince interest in the conservancy and improvement of the grazing grounds adjacent to villages. The slight increase reported from Madras was chiefly due to grazing concessions allowed in the closing year of the quinquennium in certain districts on account of the unfavourable season. The average grazing incidence in the Presidency during the last year of the period worked out to 4.59 acres per animal. In Burma the incidence of grazing in reserved forests was not serious except in the dry zone. Grazing is however a distinct menace in areas under regeneration though, it is understood, that the measures taken against it in such cases are sufficient.

10. Good progress has been made in the important work of afforesting denuded <sup>Afforestation</sup> ravine lands in the United Provinces and

mention should also be made of the attempts undertaken to reclaim certain areas in the Punjab. During the quinquennium the area of plantations in the United Provinces increased from 3,160 to 10,000 acres, the cost of afforestation being Rs. 56 per acre in 1917-18, Rs. 76 in

1920-21 and thereafter Rs. 59. The work has been extended to Agra, Jalaun, Cawnpore, Una and Aligarh districts. Owing to financial stringency no special effort was made to extend the scope of the work but the ability to afforest ordinary ravine and waste land having been demonstrated extensions will present no difficulty. Many private persons in the United Provinces have become interested in this work and the division already supplies 44,000 mounds of grass, most of which is used by the local population. The sale of firewood has also commenced on a small scale and 42,000 cubic feet were disposed of in 1923-24. In the Punjab the results of reclamation work over 615 acres was promising. The experience gained will be of considerable value in extending such work to the Hoshiarpur Siwaliks and the eroded hill sides in the Ambala and Gurgaon districts.

Plantation work continues to make good progress in many provinces, the figures for 1923-24 being (a) regular plantations 97,935 acres, (b) Taungyas 1,26,742

acres, or a total of 2,24,677 acres, as against 63,568 acres, 94,446 acres, and 1,58,014 acres, respectively, in 1918-19, the last year of the last quinquennium. The cost of the operations during the quinquennium worked out at Rs 2.07 per acre as compared with Rs 1.63 per acre for the last quinquennial period.

In the Punjab the total area sown in the new irrigated plantations at the commencement of the period was 6,123 acres. This figure rose to 13,320 acres by the end of 1923-24. Up to the end of the quinquennium the total expenditure incurred on the four plantations in existence amounted to Rs. 6,27,157 and the total revenue derived from them to Rs. 18,57,359, the revenue being obtained partly from temporary cultivation on the unplanted portions. The area of plantations in Burma increased from 82,049 acres to 1,15,539 acres during the period, the increase being chiefly in the Pegu Yoma reserves. In the Andamans 5005 acres of rubber plantations were handed over to the Settlement, whilst in Assam no further extensions were made to the rubber plantations in the Darrang and Kamrup districts, owing, in the latter case, to the fact that the plantations are now of no commercial value and there is no prospect of tapping in the future. The extension of the *Taungya* method is encouraging and is proving of much benefit to those local Governments who have decided to introduce it. The adoption of this method, combined with careful work and continual supervision, has raised the standard of plantation work very greatly during the period under review.

**Exploitation and  
commercial  
development.**

11. A satisfactory feature of forest administration during the quinquennium has been the useful work that has been carried out in this connection. The average

expenditure for the five years under review working out at Rs 53.28 lakhs per annum against an average of Rs 17.44 lakhs for the quinquennium ending 1918-19. The construction of numerous forest roads has been undertaken, ropeways and tramways have continued to be made more use of and much has been accomplished in the erection of quarters for subordinates and rest houses for inspecting officers. While the work carried out during the period indicates progress in the improvement of communications and transport facilities generally the continued financial stringency caused the postponement of many profitable projects which in normal times would have been sanctioned. The improvement of tanks and the construction of wells also received considerable attention. The expenditure, such as it is, has been heavy but the necessity for suitable accommodation in the interests of the staff has been amply demonstrated, while the extension of road communication is the main line by which forest development can advance. It is obviously difficult to show immediate profits from such works but it should be borne in mind that a road made in a forest tract almost always proves to be of the greatest use not only to Government as the owner of the forest, but also to the villagers of the neighbourhood.

12. The average annual outturn of timber and fuel from all sources during the quinquennium under review was 34,06,40,000 cubic feet against an average of 30,72,00,000 cubic feet per annum attained in the previous quinquennial

period. The highest figure ever attained under this head occurred in 1921-22 when a total of 36,13,83,000 cubic feet was reached, the year 1923-24 coming next with 35,36,90,000 cubic feet. The figures quoted for 1921-22 and 1923-24 represent respectively 2.3 and 2.4 cubic feet per acre of all classes of forests. For reserved forests only the yield in 1923-24 was 3.7 cubic feet per acre as compared with 3.3 cubic feet per acre in 1918-19 the last year of the last quinquennium. In this connection it is interesting to note that the year 1921-22 was marked by a phenomenal output of teak in Burma, viz., 600,000 tons (30,000,000 cubic feet) which was more than 74 per cent. above the average annual output of the preceding quinquennium. With the teak output of the year the revenue in Burma soared to Rs. 2,21,16,786 and the surplus to Rs. 1,30,33,692. The total outturn for the five years amounted to 2,476,849 tons, an increase of 751,000 tons or 44 per cent. over the output of the previous quinquennium.

The results on the whole, considering the general trade depression, are most satisfactory and point to more intensive working of the forests and to better exploitation. High as the figures quoted above appear to be there can be no doubt that the forests are capable of producing a higher yield, except as regards teak in Burma and this result can only be achieved by the employment of better methods of extraction than have been followed in the past. There is however reason to believe that this side of the work is engaging the earnest attention of the various local Governments and that even more satisfactory results than are now reported are likely to be obtained in the near future.

The figures for the quinquennium also show that in 1923-24 the ratio of timber extracted by Government agency to that removed by purchasers was 5 to 29 compared with a ratio of 5 to 27 in the year 1919-20. During the period the outturn removed by Government agency rose by 41 per cent. whilst that removed by purchasers increased by 19 per cent.

Timber and fuel to the value of Rs. 11,140 lakhs and minor products, including bamboos and grass, valued at Rs. 375 lakhs were removed by purchasers during the period. For the quinquennium ending 1918-19, the figures were Rs. 10,190 lakhs and Rs. 355 lakhs respectively.

13. The agreement with Messrs. Martin and Company, the <sup>Government Agencies for the sale of timber.</sup> Agents for the sale of Indian timber in Calcutta, was renewed for a further period of 3 years from the 1st November 1921, and was still in force when the quinquennium closed. Messrs. W. W. Howard Brothers and Company continued to act as sole Agents for the sale of Government timber in London and during the period consignments were regularly sent to England for disposal. The principal consignors for both Agencies were the Andamans and Burma. At the close of the period, however, the shipment of teak from Burma was discontinued on the representation of the teak firms. The results of the shipments showed that whilst there were prospects of improving the prices of the better quality of timber by consignments to Europe, there was little hope of finding a market for the poorer grades. In the case of timber other than teak it was found, in Burma, that much spade work would still be necessary to establish a market. As in the case of teak the standard of the European market is so high as to render only a small proportion of the output acceptable in the round and greater success would be possible with shipment of beams and scantlings to specified sizes. Apart from this however it is satisfactory to observe that the various local Governments utilize the services of both agencies as occasion arises. There is little doubt that the policy of retaining the services of the firms concerned has proved of the greatest assistance in making better known to the outside world the value of hitherto unknown timbers.

The total value of the timbers supplied to Messrs. Howard Brothers during the last years of the quinquennium had not been definitely ascertained when the period closed but it is a great satisfaction to notice that in 1921-22 alone sales were affected amounting to £ 73,000. The total sales from Messrs. Martin and Company during the quinquennium amounted to Rs. 20,46,000.

	Period ending June 30th *	Area under working plans at the end of last year of the period	Increase or decrease during the quinquennium.	
			Square miles.	Square miles
1869	..	..	912	.
1884	..	10,279	+9,367	
1899	..	21,620	+11,341	
1904	..	34,222	+12,602	
1909	..	48,104	+13,882	
1914	..	53,926	+5,822	
1919	..	60,670	6,744	
1924	..	59,566	-1,104	

The statement hardly conveys the whole truth. Most provinces show an increase in the area under working plans. The decrease is accounted for by five provinces, the Punjab, Assam, Central Provinces, the North-West Frontier Province and Madras. In the Punjab the following decreases took place.—*Jagir* forests were excluded during the revision of the Kangra Working Plan, certain areas for which the working plans were not wanted were excluded, and 50 square miles for which a revised plan is under preparation were also excluded. In Assam large exclusions took place in the Garo Hills, Sibsagar and Goalpara. In the Central Provinces the South Raipur Working Plan has been excluded because it had never been sanctioned. In Madras the decrease is caused by recompilation of areas.

Bengal, the United Provinces, Burma, Bihar and Orissa and the North-West Frontier Province have all done a large amount of work on plans during the quinquennium.

In almost all provinces most of the working plans are of fairly recent date: even in a large province like Burma the oldest plans are 20 years old and there are very few as old as that. The oldest plans are in the Central Provinces, some of these being 30 years old, and on the whole the Central Provinces plans are not up to date. In Burma the selection system, which was the main feature of all the old teak working plans, was subjected to much criticism, and concentrated working was strongly advocated. There was a tendency to adopt the latter without sufficient consideration, but concentrated methods are now accepted for the areas where extraction of species other than teak is, or can be made, a practical and paying proposition, and selection methods accompanied by improvement fellings will continue over the other areas.

The appointment of special working plans conservators in Burma and the United Provinces has undoubtedly improved the standard greatly in those provinces.

\* In 1924 the quinquennial period ended March 31st and not June 30th

Method of treatment	1913-14*		1918-19†		1923-24‡		System of Management.
	Area square miles	Per cent. of total area under each method of treatment	Area square miles.	Per cent of total area under each method of treatment.	Area square miles.	Per cent of total area under each method of treatment.	
Simple Coppice .. ..	161	1	1,009	2	1,858	3	
Coppice with standards .. ..	3,235	8	7,060	13	6,855	12	
Regular High Forest—							
(a) Clear felled (includes taungya)	14	0	263	0	5,224	0	
(b) Shelterwood system (includes groups, strips, etc.).	150	0	552	1	2,311	4	
Irregular High Forest—							
(a) Selection system (includes group selection, selection cum improvement, etc.).	15,897	41	16,000	30	18,149	30	
(b) Improvement fellings ..	8,880	23	12,254	23	9,654	16	
(c) Unallotted .. ..	10,432	27	15,955	31	15,515	26	
Total ..	38,769	100	53,102	100	59,566	100	

The introduction of the Bombay figures would seem to render comparison with the previous period impossible, but, although it renders a comparison of the *actual* figures impossible, an analysis showed that the inclusion of Bombay has not materially affected the *percentage* figures, except under clear fellings, which seem to have risen from 0 to 9 per cent., whereas excluding Bombay they have only risen from 0 to 4 per cent.

This table shows much better than that in the previous paragraph the great progress in working plans during the quinquennium. It is only fair to say that, though the figures show an increase in regular high forest from 1 to 13 per cent., the forest is not actually yet regular—that will take years—but it does literally mean that 13 per cent. of the forests are now under working plans for regular high forests and are therefore in process of conversion to regular forest.

The decrease in the percentage under improvement fellings is also gratifying. While nobody pretends that the excellence of management can really be judged by the percentage under regular high forest, coppice, or similar systems, the names selection, improvement, etc., are in India really often euphemisms for no system at all, and the increase in regular high forest is almost synonymous with increase in scientific management. The following small table shows the

(2) Includes forests for which working plans have been prepared but which are not at present under any definite system of working, e.g., unworkable areas including those considered to be inaccessible, included in working plans, areas devoted to grazing, etc.

\* Excludes Madras and Bombay.

† Includes Madras but excludes Bombay.

‡ Includes both Madras and Bombay.

increase in percentage for areas under regular high forest in certain provinces during the quinquennium:—

Province	PERCENTAGE UNDER REGULAR HIGH FORESTS.	
	1919.	1921
Bengal .. .. .. .. .. .. under 1 16		
United Provinces .. .. .. .. .. .. 8 30		
Punjab .. .. .. .. .. .. under 1 17		
Burma .. .. .. .. .. .. 3 10		
Bihar and Orissa .. .. .. .. .. .. under 1 13		
North-West Frontier Province .. .. .. .. .. .. 1 35		

The Assam forests are still entirely managed under improvement fellings.

16. An important feature of the quinquennium was the development of the *Panchayat and Forest Village Systems*. A forest panchayat system in Madras. A special staff consisting of a forest panchayat officer and six panchayat inspectors was appointed and their operations were confined to eleven of the principal districts of the Presidency. At the close of the period under review 858 square miles of forests had been placed under panchayat management and there were also 38 panchayats administering an area of 124 square miles in districts not under the control of the special staff. The spread of the movement has rendered possible the abolition of two ranges, one in the Bellary district and the other in Cuddapah. As the further expansion of the system is beyond the capacity of the existing staff, proposals for increasing the staff and extending the sphere of its activities are under consideration. The Punjab Government also approved of a scheme for the constitution in selected areas in the Western Circle, of village panchayats which were to take over the protection of the forests of their respective areas and themselves issue grazing permits to the villagers without the intervention of the Forest staff, the panchayat paying to the Department a fixed sum on account of the grazing lease. The scheme however has not so far proved a success.

The constitution of forest villages, with the object of increasing labour for planting and forest work generally, has grown apace during the quinquennium. The matter suffered from undue enthusiasm at first and there have been a few failures but the policy has now settled down on systematic lines. The system has been introduced more or less in all provinces and many new settlements were successfully established during the period.

#### Exhibitions.

17. The Government of India decided to participate in the British Empire Exhibition at Wembley in 1924 by the contribution of forest exhibits. A sum of £20,000 was sanctioned for the purpose and arrangements were in train at the end of the quinquennium to make the exhibit as great a success as possible. The preparation of the exhibits and all other preliminary arrangements in London were left in the hands of Messrs Howard Brothers, the Government Agents for the sale of Indian timber in England. Burma had a separate exhibit.

#### Financial results.

18. The following statement shows the growth of forest revenue and expenditure during the past 60 years, the figures in all cases being the annual averages

of the quinquennial periods.

Quinquennial period.	Gross revenue (Average per annum)	Expenditure (Average per annum).	Surplus (Average per annum).	Percentage of surplus to gross revenue.
	Lakhs.	Lakhs.	Lakhs.	Lakhs.
1861-65 to 1868-69 .. .. ..	37.4	23.9	13.6	36.4
1869-70 to 1873-74 .. .. ..	56.3	39.3	17.0	30.2
1874-75 to 1878-79 .. .. ..	66.6	45.8	20.8	31.3
1879-80 to 1883-84 .. .. ..	88.2	56.1	32.1	36.1
1884-85 to 1888-89 .. .. ..	116.7	74.3	42.4	36.3
1889-90 to 1893-94 .. .. ..	159.5	86.0	73.5	46.1
1894-95 to 1898-99 .. .. ..	177.2	98.0	79.2	44.7
1899-00 to 1903-04 .. .. ..	196.6	112.7	83.9	42.7
1904-05 to 1908-09 .. .. ..	237.0	141.0	116.0	45.1
1909-10 to 1913-14 .. .. ..	296.0	163.7	132.3	44.7
1914-15 to 1918-19 .. .. ..	371.3	211.1	160.0	43.0
1919-20 to 1923-24 .. .. ..	551.7	367.1	184.6	33.5

The gross revenue and surplus were Rs. 468.2 lakhs and Rs. 179.4 lakhs in 1918-19 and Rs. 544.9 lakhs and Rs. 195.6 lakhs in 1923-24 respectively.

The surplus rose from Rs. 1,79,42,726 in 1918-19 to Rs. 2,19,12,540 in 1919-20 but during the next three years it steadily decreased, rising again to Rs. 1,46,60,547 during the last year of the quinquennium. The surplus in 1923-24 represents an average of 2.1 annas per acre of all classes of forest against 1.8 annas in 1918-19. The total surplus rose from Rs. 1,79,42,726 in 1918-19 to Rs. 1,95,60,943 in 1923-24.

Financially the Forest Department has had during the quinquennium to undergo a severe strain, ever since the general slump set in following on the short-lived post-war boom in trade. But development solely with a view to increase the resources and earning capacity of the forests has never been lost sight of. Judging by the perceptible improvement in the general financial results all round it is confidently expected that the improvements initiated in this quinquennial period will produce much better results when the slump ends.

19. In the last quinquennial review it was noted that proposals for greatly <sup>Research</sup> <sub>General.</sub> enlarging the scope of the work of the Forest Research Institute had received the sanction of the Secretary of State after the close of the period under report.

Some 1,300 acres of land were acquired about 3 miles from Dehra Dun and were taken possession of in 1920. The first work undertaken on the site was the construction of workshops for the Economic Branch and these were completed in 1923. The machinery was installed in 1923-24 and work in all the sections began before the end of the period under review. Plans for the large main building were sanctioned and the preliminary work in connection with its erection was done. During the quinquennium all the branches continued their work at the Research Institute at Chandbagh, but when the new building is complete it will be possible to undertake forest research on a very much larger and more elaborate scale.

A list of the publications of the Forest Research Institute during the period under review is given at the end of this report.

20. It was reported in the last quinquennial report that problems had been attacked from a new point of view and that previous ideas had in some cases been revolutionised. During the present quinquennium the previous rather nebulous ideas have been crystallised into tangible systems.

The most important new policy is the appointment of local silviculturists in Bengal, the United Provinces, Burma, Bihar and Orissa, the Central Provinces and Madras. These officers have not in all cases continued to hold their posts very long and good results in research must depend on continuity of effort.

Perhaps the most striking silvicultural achievement is the systematic transmutation of the destructive *taungya* cultivation into a scientific silvicultural system. This adaptation of agriculture to forestry (originally used in India by Sir Dietrich Brandis) is now a common mode of management in Bengal and Burma, and is spreading either experimentally or actually to parts of most other provinces.

The problem of natural *sal* (*Shorea robusta*) regeneration from seed is still unsolved. The United Provinces and Bihar and Orissa have certainly made progress but it is a subject not yet fully understood. Its artificial regeneration has however been solved in places where conditions are suitable. The artificial regeneration of *sal* is very largely a labour problem and the same may be said regarding many other species. One great problem that remains to be solved is the regeneration of the magnificent evergreen forests of Assam, Burma, and the West Coast. These huge areas contain enormous quantities of valuable timbers but their exploitation must to a large extent be conditional on the proper replacement of the forest and forest officers have so far been able to do little to arrange for this. The extremely perishable nature of Dipterocarp seed is one of the important factors.

The quinquennium saw the publication of the first *sal* yield table which was largely used in working plan revision in the United Provinces. Statistical work has so progressed that shortly after the close of the period complete statistical data for *sal* will be ready both on standard and on commercial definitions of timber, and data for *chir* (*Pinus longifolia*) deodar (*Cedrus Deodara*), teak (*Tectona grandis*) and other species are nearing completion. The publication of these data will materially alter working plans and the accuracy of timber estimates for sales. The number of permanent, properly laid out, sample plots is increasing rapidly throughout India and these plots will in the future provide us with a large and very valuable mass of data.

The quinquennium has also seen the issue of much other silvicultural literature. Troop's "Silviculture of Indian Trees" appeared, and the creation of local silviculturists has stimulated publication. Useful works on silviculture or management have been published, principally by Bengal, the United Provinces, Burma and the Central Institute.

Reference is invited to these various publications and the annual Forest Research reports. It is no exaggeration to say that short though five years is in the life of a tree, the end of the present quinquennium leaves us an appreciable step forward along the path of knowledge.

21. The expansion of the branch of forest economy has been one of the chief reasons for the acquisition of the new site and the establishment of the new workshops.

Mr. Pearson, Forest Economist, went to America and England in 1919 to investigate forest research in those countries, and to obtain the necessary machinery to start the workshops at the new site, and a great part of his time and that of his staff was occupied during the quinquennium in establishing and developing research in forest economy on the new expanded lines. Six new sections were sanctioned by the Secretary of State, viz., Wood Technology, Timber Seasoning, Timber Testing, Wood Preservation, Minor Forest Products and Paper Pulp.

Dr. Brown of the Syracuse University, United States of America, spent some years at Dehra when he investigated the structures of Indian timber. He has prepared an elementary manual of Wood Technology for the forest students, and has continued this work in America, after he returned to his University, with a view to producing in collaboration with Mr. Pearson, a more elaborate work on a similar subject.

For the Seasoning Section two Sturtevant and three Tiemann kilns were erected and a great deal of experimental work has been done with these kilns with a view to discovering the best methods of seasoning of important Indian timbers. Considerable progress has also been made in the air seasoning of these timbers.

In the Timber Testing Section much progress has been made and at the end of the period under report well equipped timber-testing shops have been established, containing modern machines for testing timber in all the various ways that have been worked out in the United States of America, Canada, and Great Britain.

For Wood Preservation a large modern experimental preservation plant has been installed and many timbers have been treated with a number of different preservatives. Elaborate records are being maintained showing moisture content, the quantities of preservatives taken up and other details, which are required to determine the value of the preservation of timber for use in India. A large number of these experiments have been carried out with railway sleepers, as very large quantities of Indian timbers are used for this purpose, and this is an equity of the utmost economic importance.

In the section of Minor Forest Products a certain amount of progress was made in the investigation of numerous forest products and the dissemination of information to enquirers, but the progress made in this section was by no means all that might be desired, because it was found necessary owing to financial stringency to dispense with the services of a special officer.

The Paper Pulp Section has continued to do excellent work in experimenting with grasses and bamboos for the manufacture of pulp. There is no doubt whatever that Indian and Burmese bamboos can produce excellent pulp at a cheap rate, and the development of the industry merely awaits the formation of companies adequately equipped with funds and technical knowledge to make the industry a success.

Considerable additions have been received for the timber and economic museums and the completion of the new building will give an opportunity for the adequate display of these products as this is now quite impossible in the present Institute at Chandbagh.

During the period under review the Economic Branch has kept in constant touch with the railways and other commercial interests which are specially interested in the use of the forest products of India, and the enquiries received, not only from India but from other parts of the world, give striking evidence of the valuable work that the Economic Branch has done under the able guidance of Mr. Pearson.

A Tan Expert was employed for some time during the period under report and much valuable information regarding the tan values of Indian trees was collected. These were principally chestnuts, oaks, Dipterocarps and the trees of the mangrove forests of India and Burma. Mr Pilgrim, who was in charge of the tannin investigations, relinquished his duties in June 1923 after being connected with the Institute for 8 years.

Wood working has been much developed at the Institute and many most useful investigations in the properties and uses of Indian timbers have been completed. Thorough training has been given to a number of carpenters and much progress has been made in this line of investigation.

In the Mechanical sub-section also much useful work was done in erecting machines and maintaining the boilers, electric plant and machinery in good order. Repairs are done on the spot and the workshop can undertake the manufacture of bolts, washers and many other minor fittings required.

22. The work done by the Forest Botanist during the period under report has  
*Forest Botany.* . . . . . embraced many fields of activity.

Systematic Botany has made great strides at the Institute and the herbarium has been very greatly enlarged. Much work was done on the identification of specimens, both for the officers of the Institute and for forest officers all over India, and the help given by the Forest Botanist to the Economic Branch has been most valuable.

A considerable number of investigations were carried on regarding that perennial puzzle, spike disease in sandal-wood, but it is not possible yet to say that the enquiry is by any means concluded. The Forest Botanist suggested that it is possible that spike is caused by a very dilute solution of an Enzyme excreted by certain fungi which may only be able to enter the main water and sap currents in the plant when the damage is unusually severe or prolonged, when the plant has been weakened by other factors or under other special conditions. Such a hypothesis would harmonise with practically all the theories which so far have been advanced regarding this disease.

The Forest Botanist continued his investigations regarding regeneration of *Sal* and a great deal of information on this subject has been recorded. A summary of most of the experimental work carried out up-to-date on the factors influencing the development of *Sal* seedlings was published during the year 1921.

Progress in mycology has not been rapid, as up-to-date it has not been found possible to engage a qualified mycologist, but a certain amount of useful work was done with regard to certain fungi which attack *Sal*, *Dalbergia Sissoo*, deodar and one or two other important species.

The number of floras for various parts of India is gradually increasing and this important branch of the work of the Forest Botanist received a considerable amount of attention.

23. During the past 5 years a great advance has taken place in the study of forest entomology at the Institute. The Forest Entomologist has developed his work on broad lines, and the systematic study of insects important in the forest has resulted in a very great increase in our knowledge of Indian entomology generally. Many thousands of insects which are found in the forest have been collected, or bred and examined and the study of their life histories has made a very great advance. The importance of correlating the study of insects which damage forests with that of other insects whose life history is intimately connected with them has received full recognition.

One of the most important enquiries has been concerned with insects which damage the *Sal* tree. This is a very important wood in the United Provinces and it is easier for the Entomological Branch to study *Sal* in detail than to study any other tree. The wood borer, *Hoplocerambyx spinicornis*, has been extensively investigated, and as remarked by the Forest Entomologist.—

“ The entomological side of the problem starts with the application of general principles based on the forest entomology of Europe and North America which soon give place to new conceptions arising from acquaintance with local conditions. The control measures suggested are mainly theoretical, and, as they necessarily involve extraordinary expenditure or departure from routine, are adopted by the departmental executive with reluctance. If applied thoroughly the results are measurable with great difficulty, and, finally, if the control measures can be demonstrated as successful, the cost of application and the value of the damage prevented cannot be calculated.”

In a subsequent note the Forest Entomologist was more hopeful as to the possibility of calculating these figures. He states that in a certain forest this insect was responsible for a depreciation in the value of *Sal* timber varying between 2 as 7 p. and 4 as 10 p. per c. ft. In the years 1916-19, during which the damage was uncontrolled over 7 miles of *Sal* forest, a million c. ft. of timber were damaged, resulting in a loss of 2½ lakhs of rupees. In the period 1920-23, during which remedies were applied the loss has been reduced to a total of half a lakh and to Rs 7 000 in the year 1923. It is probable that a loss of 1 to 3 lakhs has been prevented and there was a considerable profit on the timber sales. This is the first occasion on which the large scale control of a forest insect in India has been shown to be a profitable operation.

As regards damage done to teak, a certain amount of investigation was carried out as regards the Benthic Borer in Burma, and it is very desirable, in view of the enormous damage caused by this moth, that more adequate measures should be

taken to ensure a complete enquiry. Owing to paucity of staff, however, little was done in the years under report. Insects which eat the leaves of teak also received a considerable amount of attention, and this enquiry is in progress, particularly at Nilambur in Madras.

When opportunities occurred the damage done by various insects in the coniferous forests of the Himalayas was also investigated but considerably greater attention will be paid to this when staff allows.

The evergreen forests of Assam were also studied and it was found that Shothole borers were the principal factor causing damage in felled timber.

Progress on the systematic side of forest entomology was a very satisfactory feature during the period. The foundations of a reliable reference collection have been laid on authoritative determinations, provision has been made for the permanent preservation of part of it, satisfactory relations have been established with many foreign specialists and institutions and many of the thousands of unnamed specimens have now been named.

A certain amount of work was done on lac, and this extremely important product is receiving a great deal of attention.

Other minor investigations included insects damaging Cryptomeria, Alder, Eucalyptus, Bucklandia, Oak, Gmelina, etc.

The museum, like the economic museum, is now so full that an adequate display cannot be made until the new building is ready.

24. Generally speaking the work carried out by the Chemical Branch during the 5 years ending in 1924 was concerned with investigations into gums, resins, oleo-resins and essential oils.

The turpentine from *Pinus longifolia* was further examined and its constitution reported on. Study of the turpentine derived from all the species of pine occurring in India has now been completed, and the results have been published in the Forest Records.

Oils from grasses, such as *Andropogon*, were analysed, and other plants which yield oil from various parts were also investigated. These included the leaves of the Himalayan Cypress, leaves of Himalayan Juniper, root-bark of *Morinda*, leaves of *Skimmia*, seeds of *Zanthoxylum*, Deodar wood-oil, Camphor leaf-oil from Formosan Camphor grown at Dehra, seeds of *Garcinia*, leaves of blue pine, have been examined and a number of reports published. The list will be found at the end of this report.

The Forest Chemist has also assisted other branches in subjects such as the constituents of wood preservatives and the valuable properties in certain minor products.

R. B. EWBANK,

*Officiating Secretary to the Government of India.*



*List of Forest Publications issued by the Forest Research Institute, Dehra Dun, during the 5 years period ending 31st March 1921.*

No	1.—BULLETINS (NEW SERIES).	Rs. A. R.
38.—The Construction of Calcareous Opercula by Longicorn Larvae of the Group <i>Cerambycini</i> by C. F. C. Beeson		0 3 0
39.—Note on Hollong Timber ( <i>Pipteracarpus pilosus</i> , Roxb) by R. S. Pearson		0 4 0
40.—Note on Pyinma, Ajhar or Jarul Wood ( <i>Lagerstroemia Flos Regius</i> , Retz), by the same author		0 6 0
41.—Note on Weights of Seeds, by S. H. Howard		0 3 0
42.—Note on Haldu ( <i>Idina cordifolia</i> , Hook, f.) by C. E. C. Cox		0 8 0
43.—Note on <i>Odina Wallich</i> , Roxb., by the same author		0 8 0
44.—Note on Semal or Cotton Wood, by the same author		0 10 0
45.—Note on the Miscellaneous Forests of the Kumaon Bhabar, by E. A. Smythies		1 0 0
46.—Rate of Growth of Bengal Sal, I Quality, by S. H. Howard		1 0 0
47.—Volume Tables and Form Factor Tables for Sal ( <i>Shorea robusta</i> ) by the same author.		0 6 0
48.—Note on Kandol ( <i>Terminalia paniculata</i> ), by R. S. Pearson		0 6 0
49.—Note on Thungan ( <i>Hopm olorata</i> , Roxb.), by A. Rodger		0 7 0
50.—Note on Gurjan or Kanyin, by W. A. Robertson		0 4 0
51.—An Investigation of certain Factors concerning the Resin Tapping Industry in <i>Pinus Longifolia</i> , by H. G. Champion.		0 8 0
52.—Classification of Thinnings		0 6 0
53.—Summary of results of Treated and Untreated Experimental Sleepers laid in the various Railway Systems of India, by R. S. Pearson.		0 6 0
54.—Dry Slides and Flumes (Wet Slides), by C. G. Rogers		3 12 0
55.—Animal Haulage, Caterpillar Tractors and Portable Sawmills, by the same author.		7 0 0
2.—RECORDS.		
Vol. VII, Part III.—Note on <i>Hopm chinensis</i> , Hole, by R. S. Hole		0 3 0
„ VII, „ IV.—Note on <i>Ixora Butterwickii</i> , Hole, by the same author		0 3 0
„ VII, „ V.—Notes on the Larvae and Life Histories of Pteromaline Beetles, Coleoptera, Cerambycidae, Pteromalidae, by C. F. C. Beeson.		0 8 0
„ VII, „ VI.—Note on the Mechanical Strength and Seasoning Properties of <i>Shorea robusta</i> (Sal) Timber by R. S. Pearson		0 8 0
„ VII, „ VII.—The Life History of the Toon Shoot and Fruit Borer, <i>Hypsipyla robusta</i> , Moore, with suggestions for its control, by C. F. C. Beeson.		2 4 0
„ VII, „ VIII.—Afforestation of Ravine Lands in the Etawah District, United Provinces, by E. A. Smythies.		2 0 0
„ VIII, „ I.—Report on Lac and Shellac, by H. A. F. Lindsay and C. M. Harlow.		2 12 0
„ VIII, „ II.—The Regeneration of Sal ( <i>Shorea robusta</i> ) Forests, by R. S. Hole.		2 2 0
„ VIII, „ III.—Note on the Bro Hole Borer of Teak, by C. F. C. Beeson		3 0 0
„ VIII, „ IV.—Notes on Artificial Regeneration in Bengal, by A. K. Glasson, P. T. Russell, E. O. Shebbeare, and L. E. S. Teague		2 0 0
„ VIII, „ V.—Note on the Essential Oil from the leaves of <i>Abies Pindrow</i> , Spach, by J. L. Simonsen.		2 0 0
„ IX, „ I.—Results of Antiseptic Treatment of Sleepers, by R. S. Pearson.		2 0 0
„ IX, „ II.—On Chalcidoidea (Mainly bred at Dehra Dun from pests of Sal, Toon, Chir and Sundri) by James Waterston.		1 2 0
„ IX, „ III.—Oils and Fats from the Seeds of Indian Forest Trees, Parts I—V, by M. Gopal Rau and J. L. Simonsen.		0 3 0
„ IX, „ IV.—The Constituents of some Indian Essential Oils, Parts I—VII, by J. L. Simonsen and M. Gopal Rau.		0 6 0
„ IX, „ V.—Further Experiments in the Air Seasoning of Indian Timbers and general recommendations as to Seasoning Methods, by C. V. Sweet with chapter on "Damage to Timber by Insects," by C. F. C. Beeson.		2 8 0

## 2—RECORDS—contd.

		Rs A. R.
Vol IX, Part VI	—The Constituents of some Indian Essential Oils, Part VIII—The Essential Oil from the gum-oleo-resin of <i>Boswellia serrata</i> (Roxb), by J L Simonsen	0 3 0
.. IX, ..	VII—Note on the Possibility of Camphor Cultivation from <i>Cinnamomum Camphora</i> in Northern India, by S H Howard W A Robertson and J L Simonsen	1 4 0
.. IX, ..	VIII—The Constituents of some Indian Essential Oils, Parts IX and X, by J L Simonsen	0 1 6
.. IX, ..	IX—Note on the Work of Extraction of Broad Gauge Sleepers from Nepal, by J V Collier	1 11 0
.. X, ..	I—The Constituents of some Indian Essential Oils, Part XI—The Essential Oil from the leaves of <i>Cupressus torulosa</i> , Don, by J. L. Simonsen	0 3 0
.. X, ..	II—Oils and Fats from the Seeds of Indian Forest Plants, Part VI—The Oil from the Seed of <i>Alurites montana</i> , Willd, by R S Parker, M Gopal Rau, W A Robertson and J L Simonsen, and Part VII—The Oil from the Seeds of <i>Salvia plebeia</i> , R Br, by M Gopal Rau and J L Simonsen	0 9 0
.. X, ..	III—A Sal Yield Table for the United Provinces, by E A Smithies and S H Howard	1 5 0
.. X, ..	IV—The Constituents of some Indian Essential Oils, Part XII—The Essential Oil from the Oleoresin of <i>Pinus merkusii</i> by J L Simonsen	0 2 0
.. X, ..	V—Analysis of the Tanning Properties of certain Burma <i>Japistrum</i> , by E Pasupati Reported by J A Pilgrim	0 7 0
.. X, ..	VI—General Volume Tables for Sal ( <i>Shorea robusta</i> ), by S H Howard	1 7 0
.. X, ..	VII—Interim Report on the Work under Projects No 0 and 1, by L N Seaman	0 9 0

## 3—OTHER PUBLICATIONS

Progress Report of the Forest Research Institute, Dehra Dun, for the year 1918-19		
Progress Report of Forest Research Work in India (including the Administration Report of the Forest Research Institute, Dehra Dun), for the year 1919-20		0 9 0
Progress Report of Forest Research Work in India (including the Administration Report of the Forest Research Institute, Dehra Dun), for the year 1920-21		2 0 0
Progress Report of Forest Research Work in India (including the Administration Report of the Forest Research Institute, Dehra Dun), for the year 1921-22		2 0 0
Progress Report of Forest Research Work in India (including the Administration Report of the Forest Research Institute, Dehra Dun), for the year 1922-23		2 12 0
Progress Report of the Imperial Forest College, Dehra Dun, for the year 1918-1919		1 6 0
Progress Report of the Imperial Forest College, Dehra Dun, for the year 1919-1920		1 6 0
Progress Report of the Imperial Forest College, Dehra Dun, for the year 1920-1921		1 14 0
Progress Report of the Imperial Forest College, Dehra Dun, for the year 1921-1922		1 12 0
Progress Report of the Imperial Forest College, Dehra Dun, for the year 1922-1923		1 8 0
Forest Research Institute and College Calendar, 1919	.. . . . .	1 0 0
Forest Research Institute and College Calendar, 1922	.. . . . .	2 12 0
Code for the Collection and Tabulation of Statistical Data, by S H Howard		2 0 0
Mechanical, Physical and Structural Properties of Wood grown in India, Project No 1, by L N Seaman		2 0 0
The methods of preparing Volume and Money Yield Tables for Teak Woods and Volume and Form Factor Tables for Teak Trees from data collected in the Nilgur Teak Plantations, South Malabar Division, South India, by E Bourne		9 0 0
A Forest Flora of the Andaman Islands, by C E Parkinson	.. . . . .	12 8 0

STATEMENT I.

*Area of forests under the control of the Forest Department.*

PROVINCE.		FOREST AREA IN SQUARE MILES.				Percentage of forests to whole area of Province.	REMARKS.
Name	Area in square miles.	Reserved.	Protected.	Unclassed State	Total.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bengal . . . .	76,822	(a) 5,270	(b) 1,702	4,183	11,155	14.5	(a) Excludes 18 square miles of reserved forests not under the management of the Forest Department (b) Excludes 51 square miles of other protected forests not under the control of the Forest Department.
United Provinces . .	100,720	(c) 7,341	1	41	17,366	6.9	(c) Includes 156 square miles of leased forests.
Punjab . . . .	97,281	(d) 1,653	(e) 1,036	(f) 507	6,196	6.4	(d) Includes 356 square miles of leased forests, but excludes 501 square miles of reserved forests not under the control of the Forest Department.
Burma . . . .	213,207*	27,890	..	91,355	122,215	50.3	(e) Excludes 377 square miles not under the control of the Forest Department. (f) Excludes 1,610 square miles not under the control of the Forest Department.
Bihar and Orissa . .	82,987	1,751	(g) 1,017	7	2,778	3.3	(g) Excludes 1,050 square miles not under the control of the Forest Department.
Assam . . . .	51,825	5,814	..	15,602	21,116	41.3	
Central Provinces (including Berar).	90,017	(h) 10,650	..	..	19,080	19.9	(h) Includes 174 square miles of leased forests.
Coorg . . . .	1,582	520	..	..	520	32.0	
North-West Frontier Province.	13,057	(i) 236	(j)	9	245	1.9	(i) Excludes 14 square miles of military and civil reserved forests (j) 121 square miles of civil protected forests are not shown.
Ajmer . . . .	2,707	112	(l)	..	142	5.1	(k) There are only 115 acres of protected forests in Ajmer.
Baluchistan (portions under British Administration)	54,228†	313	..	472	785	1.4	
Andamans and Nicobar .	3,117†	92	..	2,122	2,204	70.1	
Madras . . . .	113,312	18,956	..	(l) 172	10,128	11.3	(l) Reserved lands.
Bombay (including Sind)	123,231	(m) 13,708	(n) 1,173	..	14,970	12.1	(m) Excludes 516 square miles in charge of the Revenue Department. (n) Excludes 656 square miles in charge of the Revenue Department.
Total 1923-24 .	1,100,112‡	103,410	7,031	117,470	228,850	20.8	
TOTAL 1922-23 .	1,100,002‡	100,022	7,238	115,514	223,701	20.3	
" 1921-22 .	1,098,341	103,780	7,550	135,165	240,501	22.7	
" 1920-21 .	1,082,266	103,191	7,516	130,406	260,73	23.1	
" 1919-20 .	1,080,814	103,003	7,911	140,005	250,91	23.2	

\* Including 60,593 square miles for the Shan States and Kachin.

† Figures taken from the Census Report of 1921.

‡ Excluding Delhi Province and Paganur Manipur.

## STATEMENT II.

Progress made in Forest Settlements during the year 1922-23.

PROVINCE	AREA IN SQUARE MILES.			COST DURING YEAR		Entire cost per square mile of areas finally settled.
	Finally settled during year	In hand at commencement of year	Taken in hand during year	In Forest Accounts	In other Accounts	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bengal . . . . .	143	1	..	..	..	..
United Provinces . . . . .	5	3	2	..	..	..
Punjab . . . . .	2	..	2	..	..	..
Burma . . . . .	458	2,822	459	3,573	..	..
Bihar and Orissa . . . . .	1	51	50	..	..	..
Assam . . . . .	218	400	1	71	..	..
Central Provinces . . . . .	..	..	1	..	..	..
Coorg . . . . .	..	..	..	..	..	..
North-West Frontier Province . . . . .	..	..	..	..	..	..
Ajmer . . . . .	..	..	..	..	..	..
Baluchistan . . . . .	..	313	..	..	..	..
Andamans . . . . .	..	85	..	..	..	..
Madras . . . . .	20	151	..	4,008	..	..
Bombay . . . . .	67	28	149	1,028	..	..
 1923-24 . . . . .	914	3,854	667	9,940	..	..
 1922-23 . . . . .	478	3,627	629	27,210	..	..
 TOTAL 1921-22 . . . . .	480	4,081	189	38,807	..	..
 1920-21 . . . . .	758	1,366	315	11,484	1,961	..
 1919-20 . . . . .	1,771	3,876	1,982	32,671	..	..

## STATEMENT III.

*Demarcation and maintenance of boundaries.*

PROVINCE.	Length of boundaries artificially demarcated during the year	Length of previously existing boundaries repaired	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year	Length of boundaries not demarcated at the close of the year	Length of natural boundaries not repairing artificial marks	Total length of boundaries at the close of the year	EXPENDITURE ON DEMARCA-TION DURING THE YEAR		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Miles.	Miles	Miles	Miles	Miles	Miles	Miles	Rs.	Rs.	
Bengal . . . .	103	1,060	775	1,938	117	1,178	3,233	1,685	7,506	
United Provinces . . .	41	2,135	9,288	11,464	10	2,802	14,366	7,082	25,125	
Punjab . . . .	158	646	7,515	8,519	21	1,418	9,938	103	4,085	
Burma . . . .	175	2,882	14,033	17,000	231	3,110	20,161	4,198	28,079	
Bihar and Orissa . . .	..	3,131	1,613	4,617	..	361	5,008	23	1,812	
Assam . . . .	17	1,231	1,209	2,457	22	2,058	4,537	254	5,877	
Central Provinces . . .	10	8,206	22,113	30,665	213	3,235	34,136	72	15,635	
Coorg . . . .	..	..	..	480	..	56	536	..	866	
North-West Frontier Province . .	..	150	627	777	..	139	916	..	881	
Ajmer . . . .	..	10	233	243	..	158	401	..	301	
Baluchistan . . . .	..	2	436	460	..	77	537	..	..	
Andamans . . . .	..	..	21	21	33	72	129	..	..	
Madras . . . .	64	21,509	9,110	31,122	656	2,109	33,807	2,221	4,734	
Bombay . . . .	43	25,105	14,533	39,771	93	2,826	42,600	313	3,256	
<hr/>										
TOTAL	1923-24	650	66,460	82,081	149,670	1,300	10,730	170,808	15,933	98,420
	1922-23	403	66,742	82,065	110,800	1,150	10,273	170,547	12,311	108,537
	1921-22	962	67,045	83,123	131,110	1,627	10,870	172,527	31,056	99,918
	1920-21	922	60,827	90,413	151,192	1,100	10,776	172,368	20,863	87,481
	1919-20	805	61,605	86,370	151,700	1,561	10,000	172,273	30,390	99,763

#### STATEMENT IV.

*Forest Survey operations from 1st April 1923 to 31st March 1924.*

## STATEMENT IV—concl.

Forest Survey operations from 1st April 1923 to 31st March 1924—concl.

PROVINCE.	Forest Survey	NATURE OF SURVEY OPERATIONS.						TOTAL AREA OF DETAIL SURVEY		Expenditure of the year including mapping and publishing charges debitable to "Forests."	REMARKS		
		1" DETAIL SURVEY		2" DETAIL SURVEY		4" DETAIL SURVEY		1023-24	Total up to date				
		Area	Cost rate	Area	Cost rate	Area	Cost rate						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		
		Sq m	Rs.	Sq m	Rs.	Sq m	Rs.	Sq m	Rs A. P.				
Central Provinces	Damoh												
	Hosangabad												
	Berar												
	Balaghat	111	11.3					111					
	Vizianapatam												
	Avantipur												
	Cuddapah North	133.8	13.3					133.8					
	Cuddapah West	172.7	5.1					172.7					
	Cuddapah South												
	Nellore												
	Vellore South												
	Vellore West												
	Salem North												
	Salem Central												
	Salem East												
	Trichinopoly												
	Tinnevelley												
	Coimbatore-Kollengal												
	Coorg												
N.W. Frontier Province	Hazira							445	1,253 8 0				
	Punjab												
	Jhelum							4,365	420 12 0				
	Southern Plantation												
	Chakrata												
	Dehra Dun												
	Saharanpur												
	Kheri North												
	Kheri South												
	Banda												
	Urliation												
	Afforestation												
Ajmer								144					
India									120 8 0				
TOTAL 1023-24	1st April 1923 to 31st March 1924	241	0.1	0.1	1.25	..	2,565	01,882	6,31,076 0 0	Cost of mapping, publishing and special surveys only. Excluding Forest Officer Map-Headquarters charges 22,254			
" 1023-23	1st April 1923 to 31st March 1923	891	0.10	0.10	10	..	1,607	01,614	2,23,205 0 0	Ditto 92,124			
" 1921-22	1st April 1921 to 31st March 1922	319	..	1,113	..	61	..	1,706	00,307	1,77,150 0 0	Ditto 86,001		
" 1920-21	1st July 1920 to 31st March 1921	60	..	1,201	..	10	..	1,420	00,511	00,573 0 0	Ditto 125		
" 1919-20	1st July 1919 to 30th June 1920	281	..	660	..	36	..	1,185	00,001	00,326 0 0	Ditto 61,000		

Note.—The figures in column (10) for each Province have been obtained by adding column (9) to the figures given in column (10) of the published statement in the Annual Return of Statistics for the year 1922-23.

\* 1/2,000 square miles, surveyed on the 1-inch scale.

† 1/2,000 " " by aerial Photographic reproduction on the 1/2 scale.

**STATEMENT V.**

### *Progress made in working plans.*

PROVINCE.	AREA UNDER SANCTIONED WORKING PLANS					AREA NOT UNDER WORKING PLANS					REVISIONS.		
	At commencement of the year		Added during the year.		Deducted during the year.	AT CLOSE OF YEAR		PLANS NOT UNDER PREPARATION.			In progress at the end of the year.		Revised plans sanctioned during the year.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(14)
Bengal . . .	4,745	1,853	1	6,507	59	210	10	4,376	11,223		403	26	16,871
United Provinces . .	6,028	56	21	6,063	82	608	4	711	7,386		1,618	1,043	44,849
Punjab . . .	2,438	178	178	2,438	393	200	40	3,518	6,196	226	31	827	0
Burma . . .	10,011	258	..	10,269	37	3,218	6,433	7,940	27,890	1,484	2,358	1,203	38,387
Bihar and Orissa . .	1,181	..	..	1,484	634	..	..	1,205	2,770	872	610	524	2,161
Assam . . .	238	..	..	238	11	1,502	2,166	17,510	21,416	..	..	..	..
Central Provinces . .	10,077	20	25	16,072	817	513	1,299	1,796	19,680	2,600	..	..	..
Coorg . . .	520	101	101	520	..	..	..	..	520	..	..	..	..
North-West Frontier Province	185	..	..	185	784	..	..	51	236	97	77	62	1,159
Ajmer . . .	142	..	..	142	..	..	..	..	132	..	..	..	..
Baluchistan . . .	..	..	..	..	..	..	..	..	..	..	..	..	..
Andamans . . .	708	317	317	708	349	..	..	1,318	2,026	..	..	..	..
Madras . . .	5,011	647	..	6,258	327	2,292	5,219	5,350	19,128	..	..	..	..
Bombay . . .	7,869	16	13	7,872	63	920	1,102	2,581	12,485	1,237	648	36	15,697
 Total 1923-24 . .	56,056	3,140	650	58,846	449	9,403	16,303	46,165	131,107	6,536	5,805	3,520	110,133
," 1922-23 . .	57,163	768	1,398	56,633	256	8,303	10,540	130,228	220,712	9,332	6,623	1,706	91,505
," 1921-22 . .	58,955	2,172	105	61,019	245	7,113	18,184	163,188	219,501	11,744	6,103	46	52,387
," 1920-21 . .	59,455	1,593	1,404	59,584	238	8,013	18,401	164,385	250,173	8,706	4,578	2,898	51,445
," 1919-20 . .	60,190	452	1,122	59,520	237	8,704	18,151	161,561	250,936	9,052	6,919	..	21,165

## STATEMENT VI.

*Expenditure on communications and buildings.*

PROVINCE	NEW WORKS.		REPAIRS		Other Works	TOTAL.
	Buildings.	Roads	Buildings	Roads.		
	(2)	(3)	(4)	(5)	(6)	(7)
	Rs	Rs	Rs.	Rs	Rs	Rs.
Bengal . . . . .	14,240	8,618	37,206	27,150	7,588	95,222
United Provinces . . . . .	1,35,718	55,528	1,01,115	1,40,116	20,107	4,50,214
Punjab . . . . .	21,500	5,718	18,263	22,781	9,582	77,004
Burma . . . . .	1,71,351	2,34,740	1,00,700	1,15,898	61,616	6,74,303
Bihar and Orissa . . . . .	64,122	19,197	29,766	36,021	9,807	1,58,900
Assam . . . . .	24,217	24,287	28,152	46,406	12,170	1,35,241
Central Provinces . . . . .	67,731	51,011	41,092	53,302	21,804	2,38,003
Coorg . . . . .	18,628	4,966	9,574	51,698	6,001	93,867
North-West Frontier Province . .	1,748	17,216	2,483	3,027	1,436	25,010
Ajmer . . . . .	220	90	140	150	5,611	6,220
Baluchistan . . . . .	2,000	..	276	44	18	2,338
Andamans . . . . .	(a) 4,604	..	..	2,715	..	7,519
Madras . . . . .	71,889	1,08,063	73,064	94,230	11,048	3,58,314
Bombay . . . . .	98,154	1,59,500	30,239	80,052	16,451	3,82,602
1923-24 . . . . .	6,96,715	6,85,000	4,70,350	6,77,862	1,73,548	27,13,465
1922-23 . . . . .	8,05,788	10,00,050	4,70,040	6,00,000	2,00,615	32,43,410
TOTAL 1921-22 . . . . .	14,21,419	9,54,230	4,60,601	6,75,470	1,02,075	37,13,607
1920-21 . . . . .	13,73,451	8,90,500	3,55,044	6,00,017	1,40,735	33,55,797
1919-20 . . . . .	15,01,511	9,06,550	3,74,607	5,92,748	1,40,808	36,15,407

(a) Cost of labour only. Timber and material supplied Departmentally and not taken into account.

## STATEMENT VII.

## Breaches of forest rules.

Province	Cases pending from 10/22/23	NEW CASES OF THE YEAR						Total cases of the year	DISPOSED OF DURING THE YEAR						Cases settled during year		
		Injurs to forest by fire	Frauds committed or prep- aration of wood and minor forest products	Grazing without permis- sion or in trate in high crating in pro- hibited	Other offences	Total cases of the year	Total cases		Conviction		Acquittal		Total				
									Cases	Persons	Cases	Persons	Cases	Persons			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)			
Bengal	{ A 43 B 170 C 96	3	111	23	10	200	243	116	392	22	54	107	650	62			
		15	1,005	1,293	1,037	3,415	3,575	3,583	6,000	31	34	1,201	6,112	163			
		80	10	27	213	213											
	Total	173	114	1,300	1,331	1,104	4,618	1,031	3,199	6,431	83	71	3,582	6,502	251		
United Province	{ A 69 B 105 C 110	26	112	32	46	216	270	115	392	15	56	160	475	63			
		43	1,465	2,170	292	3,971	4,070	3,576	8,086	351	624	5,927	9,610	152			
		105	6	11	241												
	Total	103	180	1,680	2,208	240	4,125	4,596	3,721	9,375	396	810	4,317	10,255	235		
Punjab	{ A 173 B 591 C 83	7	237	202	114	760	782	513	600	48	45	361	1,164	217			
		12	1,804	4,832	1,100	8,395	8,922	7,000	12,020	118	296	8,016	12,233	609			
		7	5	14	109	109											
	Total	756	102	1,018	4,539	1,318	9,007	9,703	8,213	12,725	166	601	8,370	13,419	1,826		
Burma	{ A 365 B 1,174 C 83	3	608	20	145	776	1,101	534	1,350	143	266	977	3,671				
		96	6,202	210	2,151	8,620	9,603	7,158	10,671			7,418	10,671				
		83	11	94	94												
	Total	1,530	39	6,593	269	2,307	9,490	11,054	6,202	12,000	143	286	7,415	12,516	2,165		
Bihar and Orissa	{ A 88 B 95 C 117	3	100	42	65	306	391	286	891	41	157	127	1,048	45			
		10	1,100	213	61	1,450	1,615	1,444	4,935	1	7	1,441	4,612	91			
		117			117	117											
	Total	183	130	1,362	265	126	4,873	2,050	1,730	5,226	10	164	1,777	5,000	140		
Assam	{ A 89 B 85 C 1		124	26	40	210	304	203	618	21	191	224	752	64			
			524	111	232	800	975	892	2,002			852	4,002	93			
		1		5	6	6											
	Total	174		610	140	526	1,115	1,250	1,065	2,920	21	161	1,100	3,051	177		
Central Provinces	{ A 73 B 1,788 C 420	57	70	141	24	207	150	201	602	63	32	250	421	86			
		140	6,000	6,703	704	13,716	15,108	13,700	38,236	10	20	11,006	38,837	1,887			
		594	163	72	1,163	3,193											
	Total	1,811	631	6,724	6,077	554	17,196	17,637	18,421	38,440	61	132	13,005	39,831	1,873		
Orissa	{ A 2 B 1	2	1	1	4	5	1	1	1				1	1	1		
				11	11	11		11	15			11	15				
	Total	-		2	1	12	15	15	12	19		12	19		1		
North-West Frontier Pro- vince	{ A 104 B 15 C 0	12	50	24	47	117	117	101	20	71	121	572	123				
		54	3,174	10	1,610	1,600	1,600	1,600	2,740			1,700	2,740	0			
		17	0	14	41	2						2	4				
	Total	214	14	2,104	2,047	2,052	3,197	3,197	2,740	3,221	20	71	1,861	3,272	325		

## STATEMENT VII—contd.

## Breaches of forest rules—contd.

PROVINCE.	Cases pending from 1021-22	NEW CASES OF THE YEAR						Total Cases	DISPOSSED OF DURING THE YEAR						Cases pending at close of year	
		Injury to forest by fire	Unauthorised felling or appropriation of wood and minor forest products	Grazing without permission or in tracts in which grazing is prohibited	Other offences	Total new cases of the year	CONVICTION		ACQUITTAL <sup>a</sup>		TOTALS					
							Cases	Persons	Cases	Persons	Cases	Persons				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		
Ajmer . . .	{ A . . .	1	2	1	3	1	7	8	5	0	2	5	7	14	1	
		B . . .	27	174	745	320	1,575	1,575	1,574	3,135	1	1	1,575	3,139	~	
		C . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
Baluchistan . . .	{ A . . .	1	29	475	748	330	1,552	1,583	1,570	3,147	3	6	1,582	3,163	1	
		B . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
		C . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
Andaman . . .	{ A . . .	2	30	2	32	34	24	24	45	5	12	20	57	5	~	
		B . . .	00	02	..	101	101	101	241	..	..	101	241	..	..	
		C . . .	1	3	1	1	1	1	1	1	1	1	1	1	1	
Total	{ A . . .	2	1	132	94	227	229	215	230	5	12	229	268	5	~	
		B . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
		C . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
Madras . . .	{ A . . .	3,593	47	6,090	2,101	777	8,005	12,214	6,448	15,301	2,575	7,310	9,023	26,050	3,225	
		B . . .	4,801	65	15,629	4,098	601	21,455	26,250	10,710	44,973	1,463	1,828	21,182	49,901	5,077
		C . . .	1,051	489	18	28	1,586	1,586	..	..	..	..	..	..	..	
Total	{ A . . .	8,797	1,181	22,107	7,317	1,200	31,706	40,003	20,107	63,274	4,038	11,677	30,205	74,951	8,802	
		B . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
		C . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
Bombay . . .	{ A . . .	174	62	130	75	31	284	302	317	712	37	113	351	625	95	
		B . . .	1,526	210	6,135	6,130	1,303	13,787	16,313	13,750	31,657	..	13,750	31,857	1,512	
		C . . .	1,461	1,278	50	50	2,637	2,637	..	..	..	..	..	..	..	
Total	{ A . . .	1,700	1,723	7,541	6,204	1,894	16,012	18,012	14,073	35,509	37	113	14,110	35,782	1,407	
		B . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
		C . . .	~	~	~	~	~	~	~	~	~	~	~	~	~	
GAND TOTAL	{ A . . .	1,751	196	7,503	2,817	913	11,521	10,575	9,122	24,107	3,097	0,040	12,150	31,566	1,140	
		B . . .	10,204	597	42,100	28,098	6,214	70,118	49,412	75,144	108,727	1,001	5,408	77,105	171,135	9,704
		C . . .	9,372	2,653	231	178	6,474	6,474	..	..	..	..	..	..	..	
TOTAL 1923-24 . . .	{ A . . .	15,019	4,167	62,765	21,136	9,385	97,773	114	91,246	103,224	4,005	14,117	89,264	207,721	10,103*	
		1922-23 . . .	14,073	5,295	10,505	30,671	7,874	92,280	104,244	90,450	182,188	4,056	13,913	85,412	106,401	14,036
		1921-22 . . .	15,100	5,595	46,437	27,042	8,520	98,507	100,777	78,078	182,377	4,171	11,941	80,240	107,301	16,060
		1920-21 . . .	14,000	7,786	29,779	25,112	6,322	60,200	62,466	60,080	145,110	2,572	7,561	62,021	162,610	16,114
		1919-20 . . .	14,854	4,052	43,770	31,581	7,410	67,426	70,277	74,272	104,701	2,777	8,897	81,023	105,050	14,214

N.B.—A. Cases taken into Court.

B. Cases compounded.

C. Undetected cases.

\* Burma has not shown separately "A" and "B" in column 15. It has given the figures for the total of pending cases, at the close of the year 4 105.

## STATEMENT VIII.

*Area protected from fire.*

PROVINCE	AREA IN SQUARE MILES.		Percentage of forests under fire protection to total area of reserves	PERCENTAGE OF ATTEMPT TO AREA ATTEMPTED.		REMARKS
	Attempted	Protected		Average of past five years to 1922-23	1923-24.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bengal . . . . .	684	565	13.0	3.1	17.1	
United Provinces . . . . .	3,695	3,620	50.3	6.9	2.0	
Punjab . . . . .	1,217	1,212	73.6	4.5	4	
Burma . . . . .	142	135	5	10.4	4.9	
Bihar and Orissa . . . . .	1,492	1,430	85.1	9.7	4.2	
Assam . . . . .	12	9	2	10.1	25.9	
Central Provinces . . . . .	8,763	7,839	43.5	6.1	8.5	
Coorg . . . . .	154	134	20.6	5.9	13.0	
North-West Frontier Province . .	78	76	33.1	10.1	2.6	
Ajmer . . . . .	141	141	99.3	3		
Madras . . . . .	17,672*	17,120	93.2	5.4	3.1	* Includes wrongly 1,084 square miles subjected to early burning
Bombay . . . . .	10,678	10,281	77.0	22.2	3.7	
 Total 1923-24 . . . . .	 11,526	 42,571	 43.0	 10.0	 4.4	
" 1922-23 . . . . .	11,857	30,140	21.5	7.6	27.0	
" 1921-22 . . . . .	15,957	42,266	41.3	5.0	8.0	
" 1920-21 . . . . .	15,770	43,225	44.2	5.1	5.6	
" 1919-20 . . . . .	15,536	43,007	41.2	4.7	5.4	

## STATEMENT IX.

*Causes of forest fires.*

PROVINCE	Fires originating in departmental fire conservancy operations		External fires crossing the fire traces		Fires due to carelessness of outsiders		Fires originating from intention or malice		Fires due to unknown causes		TOTAL			
	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
		No	Sq. M.	No	Sq. M.	No	Sq. M.	No	Sq. M.	No	Sq. M.	No	Sq. M.	
Bengal . . . . .	1	.		11	12	20	16	2	..	45	53	88	80	
United Provinces . . . . .	23	3		37	11	81	16	28	16	72	30	240	76	
Punjab . . . . .	8	2		7	1	68	3	28	2	8	..	119	8	
Burma . . . . .	6	..		8	..	18	2	14	2	21	3	67	7	
Bihar and Orissa . . . . .	3	..		15	8	16	13	0	7	50	35	93	63	
Assam . . . . .	..	..		2	..	3	..	9	2	3	..	17	2	
Central Provinces . . . . .	17	17		120	130	99	78	19	16	366	173	621	723	
Goorg . . . . .	..	..		2	1	..	..	1	2	5	..	11	3	
North-West Frontier Province . . . . .	..	..		..	..	11	..	9	2	..	..	20	2	
Ajmer . . . . .	..	..		1	..	5	..	1	..	6	..	16	..	
Baluchistan . . . . .	..	..		..	..	..	..	..	..	1	..	1	..	
Andamans . . . . .	..	..		..	..	..	..	..	..	..	..	..	..	
Madras . . . . .	1	..		9	2	37	2	55	3	68	9	170	16	
Bombay . . . . .	48	10		119	25	433	99	206	36	925	274	1,731	413	
<hr/>														
<b>Total 1923-24 . . . . .</b>	<b>100</b>	<b>32</b>	<b>331</b>	<b>100</b>	<b>803</b>	<b>228</b>	<b>381</b>	<b>87</b>	<b>1,670</b>	<b>877</b>	<b>3,101</b>	<b>1,423</b>		
" 1922-23 . . . . .	191	62	560	309	1,037	367	1,200	784	2,125	1,084	5,017	2,489		
" 1921-22 . . . . .	210	101	716	653	1,229	491	1,497	1,169	2,525	1,448	6,207	3,804		
" 1920-21 . . . . .	225	113	613	660	1,034	320	676	514	1,015	1,051	4,301	2,658		
" 1919-20 . . . . .	210	86.1	672	588	1,198	341	1,112	709.1	2,246	1,106.1	6,447	2,800.0		

## STATEMENT X.

*Area closed and open to grazing.*

## AREA IN SQUARE MILES

PROVINCE	CLOSED TO ALL ANIMALS		OPEN TO GRAZING				Total area.	REMARKS		
	Whole year	Part of year	Of all animals		Of all animals except browsers (camels, sheep and goats)					
			Whole year	Part of year	Whole year	Part of year				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Bengal . . . . .	6,240	..	4,847	..	73	63	11,223			
United Provinces . . .	2,201	73	4,298	10	506	8	7,386			
Punjab . . . . .	474	25	5,027	172	350	148	6,106			
Burma . . . . .	21,368	..	65	162	1,782	4,510	27,887			
Bihar and Orissa . . . .	1,168	..	187	191	1,183	43	2,772			
Assam . . . . .	5,423	62	14,214	1	1,713	3	21,416			
Central Provinces . . . .	3,446	7	4,775	7	11,424	28	19,687			
Goorg . . . . .	88	410	..	..	13	410	939			
North-West Frontier Province .	52	..	8	..	175	..	235			
Ajmer . . . . .	59	79	..	..	3	79	220			
Baluchistan . . . . .	204	..	96	1	13	..	317			
Andamans . . . . .	82	..	..	..	342	..	424			
Madras . . . . .	3,091	840	14,300	48	855	..	10,184			
Bombay . . . . .	2,316	100	3,322	..	9,133	..	14,970			
TOTAL	1923-24	46,212	1,704	51,120	595	27,865	5,301	132,606		
	1922-23	45,229	1,011	143,661	680	27,945	5,188	224,613		
	1921-22	47,000	2,237	160,670	652	27,610	5,326	249,504		
	1920-21	46,835	2,515	167,130	955	26,959	6,141	250,544		
	1919-20	47,161	1,602	171,683	1,895	26,742	5,317	253,389		

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## STATEMENT XI.

### Protection from Cattle.

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STATE  
Protection

PROVINCE	GRAZED ON PAYMENT, NUMBER OF ANIMALS									
	AT FULL RATES					AT PRIVILEGED RATES				
	Buffaloes	Cows and bullocks	Goats and sheep	Camels	Other animals	Buffaloes	Cows and bullocks	Goats and sheep	Camels	Other animals
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Bengal . . . . .	8,810	1,502	237	..	53	102	1,372	..	..	11
United Provinces . . . . .	70,313	169,750	168,871	887	2,509	8,104	20,563	7,853	..	216
Punjab . . . . .	8,537	15,627	100,555	65,530	1,105	1,701	12,963	401,418	1,217	211
Burma . . . . .	5,370	26,607	10	1	168	6	..	..	..	..
Bihar and Orissa . . . . .	10,001	33,150	2,810	..	4	273	6,137	..	..	..
Assam . . . . .	6,000	1,391	318	..	274	108	38	..	..	..
Central Provinces . . . . .	230,021	672,260	356,623	361	2,232	128,098	1,748,877	2,020	..	153
Coorg . . . . .	268	3,805	..	..	20	..	..	..	..	..
North-West Frontier Province . . . . .	650	527	110	..	8	..	..	..	..	..
Ajmer . . . . .	717	7,491	..	..	6	4,062	15,262	..	..	..
Baluchistan . . . . .	18	1,013	2,800	..	5	..	..	..	..	..
Madras . . . . .	*105,233	1,068,008	751,535	..	7	11,774	187,256	14,957	..	..
Bombay . . . . .	157,118	..	78,405	786	6,341	1,109,264	..	173,189	..	3,508
<b>TOTAL 1923-24</b>	<b>614,261</b>	<b>2,001,330</b>	<b>1,573,633</b>	<b>67,871</b>	<b>13,025</b>	<b>1,351,307</b>	<b>2,039,470</b>	<b>800,397</b>	<b>1,247</b>	<b>4,129</b>
<b>" 1922-23</b>	<b>232,301</b>	<b>1,070,738</b>	<b>1,016,118</b>	<b>50,915</b>	<b>11,212</b>	<b>179,685</b>	<b>1,507,728</b>	<b>890,576</b>	<b>1,491</b>	<b>5,262</b>
<b>" 1921-22</b>	<b>384,102</b>	<b>1,394,570</b>	<b>1,000,063</b>	<b>15,812</b>	<b>10,701</b>	<b>322,002</b>	<b>2,712,765</b>	<b>713,150</b>	<b>1,223</b>	<b>5,761</b>
<b>" 1920-21</b>	<b>486,089</b>	<b>1,343,927</b>	<b>953,766</b>	<b>20,662</b>	<b>12,289</b>	<b>255,000</b>	<b>2,810,343</b>	<b>602,187</b>	<b>1,028</b>	<b>6,581</b>
<b>" 1919-20</b>	<b>591,396</b>	<b>1,107,340</b>	<b>1,153,310</b>	<b>20,886</b>	<b>13,491</b>	<b>258,528</b>	<b>2,791,840</b>	<b>619,680</b>	<b>132</b>	<b>20,537</b>

\*Includes animals grazed at enhanced or special rates  
† Includes cows and bullocks

## MENT XI.

from cattle.

GRAZED FREE, NUMBER OF ANIMALS										Total number of animals grazed.	
BY RIGHT UNDER SETTLEMENT.					DURING PLEASURE OF GOVERNMENT OR OTHERWISE THAN UNDER SETTLEMENT.						
Buffaloes.	Cows and bullocks	Goats and sheep	Camels	Other animals	Buffaloes	Cows and bullocks	Goats and sheep	Camels	Other animals		
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	
..	..	..	..	..	831	2,782	85	..	..	50,788	
41,153	478,302	48,543	..	1,398	8,669	35,150	61,011	..	144	1,111,084	
131,650	650,573	1,295,309	285	184,458	3,864	20,084	20	776	2,773	3,000,897	
141,602	356,016	..	..	928	15,054	472	..	..	12,031	361,586	
41,711	234,515	42,359	..	..	140	1,233	581	..	..	373,886	
20	88	..	..	..	4,761	8,121	2,316	..	..	23,456	
..	375	..	..	..	1,835	234,609	465	..	95	3,388,833	
35	498	..	..	..	..	10,129	..	..	..	14,735	
5,366	0,000	..	..	..	8,355	13,618	..	..	..	36,333	
..	..	..	..	..	317	1,922	..	..	..	29,840	
..	3,310	53,226	1	1,103	..	..	..	..	..	61,560	
072	4,112	2,120	..	..	9,392	76,220	453	..	..	2,235,060	
1,869	5,071	..	..	37	500,466 <sup>†</sup>	..	690	685	2,068	2,138,889	
367,107	1,710,070	1,444,557	280	188,014	502,726	404,313	65,603	1,461	17,116	13,331,092	
365,575	1,789,026	1,441,615	280	189,217	128,484	615,800	68,241	1,226	19,043	9,841,464	
378,002	2,029,210	1,464,585	473	188,086	155,000	834,091	108,524	3,516	21,255	11,897,060	
106,376	1,778,604	1,410,090	297	198,160	222,770	1,397,225	210,512	2,300	13,043	12,150,153	
405,022	1,830,657	1,435,600	186	198,850	223,405	1,372,687	117,698	6,086	15,618	12,637,077	

## STATEMENT XII.

*Area of plantations and the cost of the year's work.*

PROVINCE	AREA IN ACRES AT CLOSE OF THE YEAR			Cost of operations during the year
	Regular plantations	Taungyas	TOTAL	
(1)	(2)	(3)	(4)	(5)
Bengal . . . . .	7,155	6,409	13,564	Rs 69,737
United Provinces . . . . .	25,412	318	25,730	81,570
Punjab . . . . .	13,310	..	13,310	1,15,280
Burma . . . . .	4,419	98,740	103,159	1,47,844
Bihar and Orissa . . . . .	3,102	542	4,034	6,004
Assam . . . . .	3,236	7,051	10,287	3,054
Central Provinces . . . . .	1,210	9,743	10,953	888
Coorg . . . . .	1,312	3,940	5,161	8,847
North-West Frontier Province . . . . .	12	..	42	141
Ajmer . . . . .	598	..	598	22
Baluchistan . . . . .	52	..	52	215
Andamans . . . . .	1,631	..	1,631	..
Madras . . . . .	* 34,250		34,250	46,612
Bombay . . . . .	1,801	..	1,801	7,365
TOTAL 1923-24		97,035	126,742	224,677
" 1922-23		80,457	124,000	205,417
" 1921-22		47,119	101,109	148,223
" 1920-21		65,177	104,018	169,175
" 1919-20		66,210	101,321	167,531
				2,80,252

<sup>\*</sup> Includes Taungya plantation and cultural operations

## STATEMENT XIII.

## Outturn of forest produce.

PROVINCE	REFORESTED FORESTS		PROTECTED FORESTS		UNCLASSIFIED FORESTS		TOTAL		AVERAGE OUTTURN PER SQUARE MILE							
	REFORESTED FORESTS		PROTECTED FORESTS		UNCLASSIFIED FORESTS		TOTAL		REFORESTED FORESTS		PROTECTED FORESTS		UNCLASSIFIED FORESTS		TOTAL	
	Timber and fuel	Minor produce	Timber and fuel	Minor produce	Timber and fuel	Minor produce	Timber and fuel	Minor produce	Timber and fuel	Minor produce	Timber and fuel	Minor produce	Timber and fuel	Minor produce	Timber and fuel	Minor produce
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.	C. ft.	Rs.
Bengal	27,001,000	7,56,951	1,981,000	18,607	529,000	40,874	25,911,000	5,10,772	5,123	73	911	11	120	10	2,602	40
United Provinces	30,673,000	22,47,217	1,000	3,025	58,000	5,380	30,632,000	22,50,675	540	300	250	662	1,415	90	6,808	305
Punjab	8,056,000	12,27,047	17,020,000	10,04,655	5,034,000	2,60,827	32,340,000	25,31,532	5,809	700	1,360	240	8,020	532	6,210	409
Burma	30,023,000	6,44,893	-	-	50,000,000	8,01,748	68,418,000	13,80,653	1,300	21	-	-	620	8	805	11
Bihar and Orissa	5,020,000	1,31,012	7,502,000	1,02,289	-	-	17,401,000	1,23,332	3,380	75	7,430	180	-	-	4,856	110
Assam	5,610,000	1,71,100	-	-	(c) 8,060,000	0,71,420	15,376,000	9,42,625	919	20	-	-	632	48	718	39
Central Provinces	46,365,000	20,35,444	-	6,31,534	-	40,450	15,005,000	29,10,737	8,300	114	-	-	-	-	2,500	115
Goor	212,107	13,112	101,607	756	-	-	103,771	23,684	405	45	-	-	-	-	770	46
North-West Frontier Province	(d) 2,943	30,346	-	-	-	-	(d) 2,913	30,346	12	107	-	-	-	-	22	161
Ajmer	206,720	60,324	-	-	-	-	306,720	60,724	2,100	120	-	-	-	-	2,110	425
Baluchistan	15,657	41,211	-	-	244,658	82	630,540	43,243	140	178	-	-	804	41	55	-
Andaman	510,118	4,081	-	-	711,747	4,110	1,230,905	7,303	6,391	32	-	-	335	2	754	-
Madras	18,514,000	10,96,725	-	-	7,242,000	93,112	25,750,000	20,1,080	976	105	-	-	42,305	641	1,346	109
Mysore	61,424 (W)	18,63,731	787,610	11,722	14,000	-	50,229,000	18,65,233	3,737	154	672	10	-	-	3,450	123
TOTAL 1922-23	243,014,669	1,10,36,265	27,642,007	18,66,604	51,120,005	10,01,131	353,686,811	1,14,36,200	2,510	107	3,473	235	709	10	1,645	65
.. 1921-22	221,168,001	1,15,74,220	37,957,234	13,87,470	50,813,620	18,20,410	340,956,971	1,46,73,915	2,101	111	5,941	161	780	10	1,101	65
.. 1920-21	218,640,975	1,00,07,572	3,735,816	13,10,710	107,266,274	17,08,078	361,385,074	1,26,07,264	2,100	103	4,701	174	776	10	1,448	65
.. 1919-20	195,012,636	1,00,08,761	11,530,416	12,00,168	79,101,007	20,00,708	305,661,080	1,26,10,027	1,748	97	4,503	161	567	10	1,192	65
.. 1918-19	205,357,374	93,16,121	37,516,997	14,75,064	60,042,107	20,84,600	339,535,980	1,26,77,155	1,004	91	4,721	186	600	10	1,330	61

(a) Includes leased land.

(b) Excludes leased land.

(c) Excludes leased land.

(d) Excludes leased land.

(e) Excludes leased land.

(f) Excludes leased land.

(g) Excludes leased land.

(h) Excludes leased land.

(i) Excludes leased land.

(j) Excludes leased land.

(k) Excludes leased land.

(l) Excludes leased land.

(m) Excludes leased land.

## STATEMENT XIV.

Forest produce removed by different agencies.

## Part I.—Timber and Fuel.

PROVINCE	TIMBER					FUEL										
	By Govern- ment		By purchase		By fore grantees	By right holders		TOTAL	By Govern- ment		By purchase		By fore grantees	By right holders		TOTAL
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
	C ft	C ft	C ft	C ft	C ft	C ft	C ft	C ft	C ft	C ft	C ft	C ft	C ft	C ft	C ft	
Bengal	322,000	16,426,000	27,000	-	16,774,000	235,000	10,235,000	1,064,000	-	12,137,000	-	-	-	-	-	
United Provinces	378,000	7,714,000	120,000	770,000	8,001,000	410,000	10,730,000	610,000	18,872,000	50,031,000	-	-	-	-	-	
Punjab	1,750,000	1,335,000	110,000	1,312,000	4,510,000	1,821,000	2,275,000	22,000	35,712,000	27,830,000	-	-	-	-	-	
Burma	5,580,000	25,167,000	402,000	1,084,000	40,213,000	3,500,000	41,352,000	101,000	4,132,000	50,205,000	-	-	-	-	-	
Bihar and Orissa	65,000	2,001,000	15,000	272,000	2,319,000	1,102,000	4,072,000	33,000	5,015,000	11,132,000	-	-	-	-	-	
Assam	282,000	7,459,000	605,000	-	4,295,000	23,000	3,703,000	3,740,000	7,000	7,484,000	-	-	-	-	-	
Central Provinces	2,711,000	7,630,000	267,000	66,000	10,703,000	1,000,000	30,593,000	1,511,000	658,000	34,562,000	-	-	-	-	-	
Coorg	86,152	66,522	-	-	162,734	81,515	133,325	-	-	211,040	-	-	-	-	-	
North-West Frontier Province	648	13	20	5	683	43	260	1,220	810	2,250	-	-	-	-	-	
Ajmer	-	6,090	-	745	7,425	93,476	205,826	-	-	200,304	-	-	-	-	-	
Baluchistan	-	20,280	808	-	21,164	21,778	287,488	120	-	300,386	-	-	-	-	-	
Andamans	800,236	8,213	31,530	7,167	870,030	417,010	12,500	27,840	120,500	825,146	-	-	-	-	-	
Madras	-	1,313,000	3,277,000	340,000	37,000	4,976,000	1,114,000	10,150,000	50,000	151,000	20,774,000	-	-	-	-	
Bombay	-	1,731,000*	4,550,000	70,000	11,000	6,340,000*	5,020,000	38,063,000	21,000	6,577,000	45,883,000	-	-	-	-	
TOTAL 1923-24	15,280,036	89,607,774	2,102,118	4,160,117	110,210,037	16,747,146	150,147,025	8,076,182	60,342,876	244,915,129	-	-	-	-	-	
,, 1922-23	14,874,963	80,531,547	2,116,348	4,017,237	107,040,095	16,778,094	140,514,225	10,324,440	71,840,120	242,665,870	-	-	-	-	-	
,, 1921-22	10,800,862	90,612,688	2,434,884	4,041,720	110,899,074	21,760,923	136,780,027	14,205,170	68,730,000	241,407,020	-	-	-	-	-	
,, 1920-21	13,256,610	72,374,084	1,040,100	3,131,627	90,702,430	16,943,042	114,650,686	11,769,861	64,600,000	207,069,550	-	-	-	-	-	
,, 1919-20	14,020,001	80,595,176	2,110,671	3,080,100	100,921,004	22,917,740	137,720,267	12,318,623	66,570,000	238,582,830	-	-	-	-	-	

\* And also Sandalwood—  
Kiln m. lbs.  
216 14 15  
444 rejected.  
c. ft 185 trees,  
853 roots,  
127 billets

## STATEMENT XIV—contd.

Forest produce removed by different agencies—contd.

## Part II.—Value of minor forest produce.

Province	Period					Grazing and Fodder Class					Other Minor Products				
	By Government	By purchase	By free grants	By right holders	Total	By Government	By purchase	By free grants	By right holders	Total	By Government	By purchase	By free grants	By right holders	Total
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bengal	173	1,01,721	749	..	1,02,461	33,253	20,294		60,177	4,181	2,67,704	12,931			2,84,932
United Provinces	489	2,05,572	46	7,553	2,13,600	11,003	1,80,487	10,960	2,07,071	5,08,778	3,80,602	10,81,506	7,602	55,378	16,31,239
Punjab	60,857	1,750	671	12	61,629	14	1,71,027	16,255	20,01,033	22,03,42	1,87,950	18,938	2,117	41,357	2,53,121
Burma	1,020	2,83,800	201	12,167	2,96,693		18,950	69,471	1,61,630	2,63,757	3,707	7,17,034	600	1,13,252	8,35,843
Bihar and Orissa	17,540	61,720	229	20,920	1,00,461		12,015	740	90,107	1,12,572	10,021	67,672	60	10,706	1,01,263
Assam	161	56,000	10,753		71,550	..	16,310	19,715	22	37,056	17,006	6,13,044	1,70,016		7,40,000
Central Provinces	4,780	4,18,721	5,018	3,031	4,71,859	3,732	10,10,176	1,45,810	2,51,074	20,10,702	1,50,410	2,89,731	18,000	3,455	1,60,586
Coorg	3	1,010			1,040	390	1,073		..	1,463		20,402	..	..	20,492
North-West Frontier Province	..	..	..	..	..		1,311	19,025	6,713	25,079	12,647	1,020	100	..	13,607
AJMER	..	659			659	1,051	0,570	1,402	41,072	64,076	120	2,800	..		3,289
Baluchistan	..	..	..	..	..		705	..	41,420	42,173	134	445	401	..	1,069
Andamans	170	59	3,142	174	1,650						685	156	3,763	604	5,563
Madras	54,208	3,45,110	4,320	143	4,03,800		9,11,769	22,415	6,967	9,40,191	29,400	7,18,875	2,810	761	7,45,993
Bombay	28	1,19,840	721	9,907	1,43,846	19,017	7,85,727	39,982	6,20,240	14,60,486	9,227	2,15,070	2,013	34,603	2,60,022
TOTAL 1922-23	1,45,447	16,00,620	91,104	60,123	16,16,850	71,310	17,71,856	7,70,002	15,41,406	77,25,004	8,63,411	30,13,493	2,25,83	2,72,610	62,70,203
.. 1922-23	95,105	16,10,140	39,459	1,18,401	17,71,140	17,576	14,61,066	1,17,417	34,91,293	74,21,101	10,00,663	29,57,070	2,47,056	1,70,504	53,68,807
.. 1921-22	76,303	13,32,650	29,202	64,600	16,07,074	20,850	17,81,151	3,75,444	37,03,970	66,70,100	21,37,078	20,83,135	3,21,070	1,12,088	57,64,271
.. 1920-21	63,514	13,40,103	21,380	59,117	12,07,053	30,451	14,03,390	3,01,000	70,11,370	75,60,210	20,23,001	25,73,501	2,00,250	2,37,503	61,39,355
.. 1919-20	1,76,322	13,50,302	31,330	58,017	10,15,527	1,70,052	30,41,306	7,01,620	10,20,003	70,08,960	27,25,085	31,40,920	2,44,800	2,60,907	64,04,301

## STATEMENT XV.

*Exports of forest produced by sea from British India.*

ARTICLES OF FOREST PRODUCE	QUANTITY IN TONS OF 20 CWT IN THE CASE OF TEAK AND OTHER TIMBERS, CUBIC TONS		VALUATION AT PORT OF SHIPMENT IN 1923-24	
	Average of 5 years 1918-19 to 1922-23	In 1923-24	Total	Per ton
	(1)	(2)	(3)	(4)
Choutchouc, raw	5,723	6,889	1,14,46,018	1,661
Lac	571	843	38,45,642	4,562
Shell	16,054	19,857	8,06,96,260	4,084
Stuck, seed and other kinds	1,722	3,583	60,85,241	1,698
Cutch and gambier	2,222	2,343	9,52,686	407
Myrabolans	61,545	66,238	72,62,422	110
Cordamoms	369	314	17,56,768	5,595
Sandal	347	730	11,22,148	1,518
Ebony and other ornamental wood	*	*	1,87,815	..
Teak	33,187	40,097	1,06,94,024	267
Other timbers	4,791	4,067	4,03,342	100
 TOTAL IN 1923-24	.	.	12,44,54,360	..
" 1922-23	.	.	12,70,97,378	..
" 1921-22	.	.	9,98,56,627	..
" 1920-21	.	.	10,04,79,350	..
" 1919-20	.	.	11,78,26,630	..

\* Quantity not recorded.

## STATEMENT XV (a).

Year (calendar)	Imports of timber into British India 1920-1924		Imports of sleepers of wood* for railways into British India 1920-1924	
	Cubic tons	Rs	Cubic tons	Rs
1920	68,560	1,16,08,544	10,272	19,89,780
1921	60,381	91,99,142	23,681	46,78,556
1922	38,527	49,13,195	18,926	29,44,791
1923	30,427	39,75,721	29,147	39,25,249
1924	60,814	32,32,327	645	87,662

\* Includes sleepers of Jarrah and other wood

## STATEMENT XVI.

*Estimated value of forest produce given away free or at reduced rates.*

PROVINCE	Timber.	Fuel	Bamboos	Grass and grazing	Other minor produce	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bengal	2,005	34,273	16,016	34,692	12,084	1,00,260
United Provinces	80,054	1,62,001	7,500	3,06,767	62,880	6,18,301
Punjab	80,510	7,55,310	983	20,37,141	46,471	29,20,747
Burma	1,21,697	1,257	231	69,871	798	1,03,854
Bihar and Orissa	39,094	1,75,127	27,225	90,937	20,584	3,61,957
Assam	31,466	55,571	16,783	18,661	1,07,753	3,20,230
Central Provinces	15,866	28,911	6,423	1,48,310	10,955	2,10,485
Coorg	..	..	..	2,670	..	2,670
North-West Frontier Province	2,401	43,085	..	24,338	100	69,924
Ajmer	..	..	..	45,474	..	45,474
Baluchistan	219	6	..	460	25	719
Andamans	4,960	2,465	1,315	..	4,733	13,382
Madras	50,302	1,343	4,793	28,706	3,831	94,775
Bombay	23,603	2,20,208	9,028	6,03,122	36,016	9,62,177
 TOTAL 1923-24	4,76,177	14,88,377	91,096	34,80,061	3,07,733	50,31,214
" 1922-23	5,75,162	18,05,069	1,08,619	46,44,162	4,34,580	76,58,507
" 1921-22	6,16,630	21,80,425	1,50,450	46,10,014	6,96,935	85,70,269
" 1920-21	5,05,706	23,82,766	1,54,418	48,47,013	8,96,897	87,86,800
" 1919-20	5,20,673	23,62,430	1,08,218	49,05,316	7,12,900	87,59316

## STATEMENT XVII.

*Details of revenue and expenditure for the Forest year 1923-24.*

		Rs	Percent- age of each item to total
<b>Gross Receipts</b>			
	(a) Wood . . . . .	4,28,80,694	78.7
	(b) Minor forest produce . . . . .	40,14,160	8.5
	(c) Forest stamps and commutation fees for forest produce . . . . .	1,15,233	·3
	(d) Grazing . . . . .	37,66,063	6.9
	(e) Revenue from forests not managed by Government . . . . .	3,05,004	·7
	(f) Miscellaneous . . . . .	26,59,081	4.9
	<b>Total Revenue</b>	<b>5,41,01,224</b>	
<b>A.</b> <b>Recurring</b>			
	(a) Administration. { (i) Superior Staff . . . . . (ii) Subordinate Staff (including Rangers, Foresters and Guards) . . . . . (iii) Office Establishments (including Contingencies) . . . . .}	1,06,00,450	47.8
	(b) Working { (1) Extraction . . . . . (2) Roads and Buildings . . . . . (3) Fire protection . . . . . (4) Cultural operations . . . . . (5) Live-stock, stores and plant . . . . . (6) Working-plans . . . . . (7) Rent for leased forests . . . . . (8) Miscellaneous . . . . .}	1,07,02,331	30.6
	(c) Expenditure on realization of revenue from forests not managed by Government.	22,000	·1
	(d) Forest Science and Education (including all "A" and "B" charges of Imperial Forest College and Research Institute*)	7,75,642	2.2
	<b>Total</b>	<b>3,39,48,611</b>	
<b>B.</b> <b>Extraordinary</b>			
	(e) Forest Settlement . . . . .	33,220	·1
	(f) Forest Survey . . . . .	5,14,458	·6
	(g) Forest Demarcation . . . . .	1,27,087	·3
	(h) Gain or loss by exchange on English transactions, interest on capital outlay, etc	2,76,296	·8
	<b>Total</b>	<b>9,81,070</b>	
	<b>GRAND TOTAL OF EXPENDITURE</b>	<b>3,49,30,281</b>	
	<b>Net Revenue</b>	<b>1,93,60,943</b>	

\*Expenditure under this head in provinces has been included in (a) Administration.

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## STATEMENT XVIII.

**Summary of revenue and expenditure of the Forest  
Department in India for the financial  
year 1922-23.**

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## Summary of revenue and expenditure of the

Budget Heads	Imperial	Bengal	L United Provinces	Punjab	Burma	*Bihar and Orissa	Assam
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>REVENUE</b>							
I.—Timber and other produce removed from the forests by Government agency	22,436	3,74,463	16,13,474	31,91,625	41,10,482	38,268	2,00,539
II.—Timber and other produce removed from the forests by consumers or purchasers	6,297	17,87,863	53,84,107	5,27,778	1,35,12,445	9,26,172	14,52,946
III.—Drift and waif wood and confiscated forest produce		12,382	6,493	31,467	3,05,430	57	19,504
IV.—Revenue from forests not managed by Government			41,746	3,481	2,17,475		66,385
V.—Miscellaneous	823	86,657	3,10,159	6,32,182	2,82,637	44,588	1,41,916
<b>Total Revenue</b>	<b>29,551</b>	<b>22,61,515</b>	<b>78,60,029</b>	<b>43,80,533</b>	<b>1,76,93,301</b>	<b>10,29,085</b>	<b>10,74,292</b>
<b>EXPENDITURE</b>							
<b>A—CONSERVANCY AND WORKS</b>							
I.—Timber and other produce removed from the forest by Government agency	3,534	1,46,797	11,51,422	11,36,646	33,38,511	35,600	2,16,247
II.—Timber and other produce removed from the forests by consumers or purchasers		1,63,057	2,34,122	1,950	2,71,144	25,817	27,491
III.—Drift and waif wood and confiscated forest produce		1,493	1,432	12,294	1,91,001	24	979
IV.—Revenue from forests not managed by Government			21,554		1,128		
V.—Rent of leased forests and payments to share holders in forests managed by Government		129	1,33,608	92,727			41,877
VI.—Live-stock, stores, tools and plant		22,760	1,26,731	28,978	3,10,017	13,391	34,134
VII.—Communications and buildings	880	1,01,172	1,56,218	81,845	5,08,830	1,62,825	1,35,636
VIII.—Demarcation, improvements and extension of forests	570	1,25,228	3,70,278	2,23,265	2,14,922	37,867	28,769
IX.—Miscellaneous		12,093	48,089	2,15,160	5,63,016	8,829	17,131
<b>Total A—Conservancy and Works</b>	<b>4,783</b>	<b>5,73,018</b>	<b>25,43,541</b>	<b>17,97,765</b>	<b>53,99,478</b>	<b>2,81,153</b>	<b>5,02,267</b>
<b>B—ESTABLISHMENTS</b>							
Total B—Establishment including Salaries, Travelling and other allowances and contingencies	1,30,701	6,69,054	17,75,113	10,96,819	40,17,593	4,00,806	6,24,375
Total gain or loss by exchange on English transactions, interest on capital outlay, etc			32,038	21,451		5,698	33,203
<b>Grand Total of Expenditure</b>	<b>1,44,489</b>	<b>12,42,672</b>	<b>43,50,695</b>	<b>29,16,035</b>	<b>54,17,071</b>	<b>7,60,657</b>	<b>11,50,846</b>
<b>SURPLUS</b>		<b>10,18,843</b>	<b>30,05,334</b>	<b>14,70,408</b>	<b>82,76,233</b>	<b>2,76,428</b>	<b>8,14,447</b>
<b>DEFICIT</b>	<b>1,14,038</b>						
Proportion of surplus to gross revenue		45	11	34	47	27	41
Net revenue per square mile of forest area under control of Forest Department		91	407	237	67	100	38

\* Includes Angul Division.

† Includes Rs 4,84,094 on account of Forest Survey.

## MENT XVIII.

Forest Department in India for the financial year 1923-24.

Central Provinces	Conn.	North-West Frontier Province.	Ajmor	Baluchistan	Andamans	Forest College and Research Institute	Forest Survey (Imperial)	Madras	Bombay.	TOTAL
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Rs	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs
7,76,601	6,61,401	4,61,870	14,186	4,105	5,91,748	..	..	17,08,683	22,46,740	1,61,46,510
40,27,142	42,553	21,220	34,316	2,757	1,810	..	..	31,61,027	45,11,240	3,61,99,800
2,230	..	708	3	33	..	..	..	15,654	4,553	3,98,583
22,576	..	2,031	..	14,008	..	..	..	0	27,334	3,96,094
2,76,288	6,993	40,631	6,968	1,500	17,818	1,07,330	..	5,30,337	3,50,731	23,50,823
51,01,920	7,00,047	5,38,332	66,422	22,103	6,11,382	1,07,330	..	54,18,557	71,40,004	6,44,91,224
2,13,575	2,12,860	2,88,000	7,658	1,001	5,48,973	..	..	6,08,131	15,36,250	93,16,115
2,11,116	..	..	514	..	667	..	..	1,70,631	39,000	11,46,100
165	..	32	..	..	..	..	..	1,136	261	2,00,717
..	..	..	6,427	6,202	165	..	..	3,730	47,203	3,61,660
22,177	..	..	..	..	..	..	..	2,10,003	—162	10,35,428
60,164	17,621	3,400	420	11	99,261	69,288	..	3,73,070	1,40,107	24,00,604
2,20,607	91,118	26,065	6,217	2,337	64,419	11,083	..	1,78,440	1,38,131	17,27,349
2,22,903	52,070	4,351	2,675	720	18,067	..	95,914	21,430	60,604	11,60,081
58,000	7,390	5,891	972	320	10,690	1,32,412	..	..	..	..
10,16,078	3,04,950	3,34,208	24,007	5,151	7,72,690	2,15,703	65,014	13,07,220	19,71,603	1,74,03,666
20,00,604	3,70,030	1,21,200	24,787	125,060	1,23,523	5,59,870	..	31,03,544	23,33,006	1,72,50,329
21,123	..	..	..	..	..	..	..	63,053	90,425	2,76,240
10,11,104	5,65,595	4,68,567	40,461	31,440	8,96,214	7,76,642	65,014	40,33,620	44,01,021	1,34,30,481
20,03,821	1,36,340	74,705	6,908	..	..	..	..	7,81,731	27,18,650	2,06,73,097
..	..	..	..	9,037	2,91,832	6,06,303	65,011	..	..	11,13,051
40	10	11	11	..	..	..	..	11	34	36
105	200	304	42	..	..	..	..	41	184	85

## STATE

Revenue of the Forest Department throughout India for the 25 financial years

## (I) REVENUE

PROVINCE	Average of 1869-70 to 1871-74	Average of 1871-75 to 1875-79	Average of 1879-80 to 1883-84	Average of 1884-85 to 1888-89	Average of 1889-90 to 1893-94	Average of 1894-95 to 1898-99	Average of 1899-1900	
	Rs	Rs	Rs	Rs	Rs	Rs	Rs	
Imperial* . . . .	2,175	31,717	27,429	10,666	5,147	9,684	6,090	
Bengal† . . . .	1,61,368	2,80,772	6,06,378	6,31,394	7,60,431	10,49,364	11,38,910	
United Provinces . . . .	12,59,979	12,21,070	11,31,615	14,63,525	16,89,190	15,31,824	16,11,740	
Punjab . . . .	6,57,423	7,07,358	7,37,338	9,11,950	9,00,117	11,39,510	11,00,770	
Burma . . . .	8,91,208	11,29,175	19,89,376	25,01,318	19,78,654	66,15,512	75,12,050	
Bihar and Orissa . . . .								
Assam‡ . . . .		1,01,008	1,01,857	2,32,055	3,82,730	4,15,912	5,68,109	
Central Provinces and Berar . . . .	7,41,879	9,79,916	12,81,992	14,11,163	16,98,505	13,75,958	12,07,491	
Coorg . . . .	92,491	78,657	1,03,170	1,13,024	1,54,136	1,33,456	1,62,110	
North-West Frontier Province								
Ajmer . . . .	65	1,152	4,475	11,859	15,233	14,162	10,270	
Baluchistan . . . .			8,576	10,973	17,996	15,710	17,060	
Andamans . . . .	5,167	4,185	34,810	37,613	2,79,025	2,51,135	2,60,600	
Imperial Forest College and Research Institute				397	1,636	3,910	3,210	
Forest Survey (Imperial) . . . .		17	139	206	668	300	420	
Madras . . . .	6,01,243	5,88,389	8,06,020	13,09,181	17,11,326	21,10,948	24,02,290	
Bombay . . . .	11,77,673	12,28,561	18,04,818	30,11,311	34,54,892	40,46,214	24,15,200	
GRAND TOTAL . . . .	56,30,061	66,60,497	88,17,213	116,63,118	159,10,014	177,15,750	1,00,00,610	
	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15
	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Imperial* . . . .	7,666	8,180	10,632	8,662	10,680	12,837	11,471	12,047
Bengal† . . . .	11,07,650	11,61,615	10,80,610	11,67,411	11,22,112	16,00,601	15,16,111	13,04,196
United Provinces . . . .	24,00,745	21,75,406	21,01,164	23,75,139	30,16,160	35,13,963	37,12,187	31,23,235
Punjab . . . .	14,57,119	12,85,792	10,32,033	12,17,958	13,10,077	12,39,073	13,54,913	14,38,003
Burma . . . .	86,66,939	91,92,032	93,58,077	10,07,117	99,67,594	1,09,22,393	1,11,25,130	97,07,691
Bihar and Orissa . . . .					4,07,213	4,14,958	4,91,735	5,49,779
Assam‡ . . . .	14,30,447	14,16,368	15,51,732	18,90,615	11,16,420	11,12,091	10,97,969	5,12,577
Central Provinces and Berar . . . .	22,90,128	20,78,162	20,78,310	21,11,226	25,40,851	31,71,815	31,86,453	32,72,520
Coorg ‡ . . . .	2,74,756	2,24,330	2,13,129	2,76,056	2,95,170	2,81,632	3,29,227	1,90,237
North-West Frontier Province	2,38,190	1,22,782	1,73,305	2,05,312	1,38,171	2,37,183	2,46,741	2,39,013
Ajmer . . . .	20,864	27,615	23,990	33,846	26,361	26,596	34,897	31,170
Baluchistan . . . .	24,829	23,307	18,729	23,212	20,117	20,159	19,988	19,055
Andamans . . . .	2,19,822	2,02,018	2,50,477	4,16,773	5,22,160	4,49,925	4,15,911	3,39,248
Imperial Forest College and Research Institute	6,137	4,680	4,909	4,050	5,550	7,611	5,506	8,617
Forest Survey (Imperial) . . . .								
Madras . . . .	38,97,910	35,90,310	41,78,191	38,50,111	41,68,921	41,12,473	42,00,320	39,41,537
Bombay . . . .	36,46,177	35,97,756	37,57,656	37,18,224	43,30,560	40,02,510	51,03,156	46,90,242
GRAND TOTAL . . . .	2,55,02,079	2,54,56,780	2,60,23,791	2,74,05,474	2,90,57,359	3,22,09,809	3,33,01,613	2,07,09,781

\* Includes pay of Inspector General of Forests, Assistant Inspector-General of Forests  
 † Includes figures up to 1910-11 for districts subsequently transferred to Bihar and Orissa  
 ‡ Includes figures up to 1910-11 for Eastern Bengal districts subsequently transferred

## MENT XIX.

from 1899-1900 to 1923-24 and the average of 6 quinquennial years from 1869-70 to 1898-99.

## N.U.L.

1900-01	1901-02	1902-03	1903-04	1904-05	1905-06	1906-07	Province.
Rs.							
2,463	2,184	2,650	2,455	3,765	2,235	2	Imperial *
12,39,339	12,92,917	12,56,237	10,65,211	11,67,472	11,18,512	10,65,450	Bengal †
15,65,403	17,15,698	20,25,824	21,80,416	26,97,918	24,63,428	25,02,663	United Provinces.
13,50,842	14,47,756	15,86,408	17,17,797	18,74,413	17,51,653	16,65,284	Punjab.
80,51,144	58,73,938	67,39,053	82,68,335	86,50,756	1,03,99,869	98,12,510	Burma
..	..	..	..	..	..	..	Bihar and Orissa.
5,49,521	5,12,963	5,60,200	6,75,732	8,17,677	11,03,060	10,20,702	Assam ‡
12,63,611	13,79,110	16,4,128	19,93,032	20,13,459	21,49,141	21,91,100	Central Provinces and Berar.
1,37,596	1,70,212	1,99,730	2,24,031	1,93,087	2,15,119	2,35,900	Coorg.
..	13,012	1,01,123	1,01,833	90,991	1,25,529	1,83,211	North-West Frontier Province
10,646	6,865	9,736	12,551	17,297	15,002	18,195	Ajmer
16,056	14,712	10,336	18,363	22,575	21,151	21,195	Baluchistan.
2,77,546	2,66,003	3,26,035	4,32,351	6,20,790	5,82,511	6,97,027	Andamans
3,607	3,515	3,252	3,078	3,637	3,080	4,579	Imperial Forest College and Research Institute
327	473	1,014	431	..	..	..	Forest Survey (Imperial).
23,40,170	23,43,430	26,13,819	26,57,727	28,29,216	29,67,604	32,40,660	Madras
20,61,529	20,70,770	21,29,150	27,51,530	30,20,558	38,94,093	31,22,481	Bombay.
1,97,70,403	1,78,23,716	1,03,71,510	2,22,16,747	2,10,29,050	2,06,71,693	2,04,91,150	GRAND TOTAL.

1915-16	1916-17	1917-18	1918-19	1919-20	1920-21	1921-22	1922-23	1923-24	Province
Rs.									
23,157	24,516	51,720	27,494	24,527	27,122	27,503	26,553	29,551	Imperial.*
11,45,610	13,38,770	13,76,060	10,11,101	20,51,237	21,91,761	18,98,050	23,11,220	22,61,517	Bengal †
37,49,431	50,10,972	61,16,007	60,37,106	71,71,054	87,70,781	80,30,077	83,72,503	73,50,026	United Provinces.
17,37,283	10,87,601	21,17,770	21,54,178	38,45,878	38,05,958	19,01,178	34,41,443	13,56,533	Punjab.
66,99,217	1,23,79,531	1,23,61,109	1,25,28,812	1,61,37,262	1,80,76,060	2,21,16,757	1,50,43,052	1,76,93,301	Burma.
5,17,727	5,20,741	7,63,625	9,11,763	8,17,154	8,10,609	8,00,379	8,81,001	10,29,085	Bihar and Orissa
10,55,052	11,49,621	13,09,936	11,92,716	11,81,500	15,31,911	12,97,027	17,13,853	11,71,202	Assam ‡
32,78,262	33,71,578	31,86,103	31,88,122	15,46,723	13,91,520	11,43,603	47,06,970	51,04,920	Central Provinces and Berar.
1,49,165	1,67,311	1,68,673	0,77,673	9,48,026	4,27,351	7,33,731	9,42,053	7,00,917	Coorg.
1,80,815	2,40,955	3,37,711	3,81,322	4,62,541	2,10,770	5,71,653	7,27,650	6,33,332	North-West Frontier Province.
23,145	21,272	27,733	37,250	34,011	48,112	40,812	13,078	35,422	Ajmer
21,633	18,277	15,931	26,108	17,037	22,541	17,220	11,039	22,101	Baluchistan.
1,31,781	6,49,711	7,93,686	11,54,383	8,00,795	6,21,371	5,50,098	5,88,027	6,11,162	Andamans.
6,095	8,399	8,301	9,093	8,308	12,618	21,117	1,81,763	1,57,339	Imperial Forest College and Research Institute.
..	..	..	..	..	..	..	..	..	Forest Survey (Imperial).
41,06,578	45,96,120	55,69,450	47,01,160	62,34,140	53,91,216	46,00,171	52,72,050	54,15,757	Madras
47,01,203	46,10,177	63,12,022	1,01,01,031	81,01,139	68,98,566	71,03,703	70,37,381	71,49,601	Bombay.
3,11,16,367	3,70,61,030	1,09,60,257	1,05,18,231	6,36,76,780	5,41,43,406	5,83,16,071	6,52,13,072	5,11,91,221	GRAND TOTAL.

Office Establishment, and undistributable and petty local items and revenues and charges, on Indore and Bangalore. Excludes House Charges.  
Orissa.  
go Bengal.

*Expenditure of the Forest Department throughout India for the 25 financial years*

## (II) EXPEN

PROVINCE	Average of 1809-70 to 1873-74	Average of 1874-75 to 1878-79	Average of 1879-80 to 1883-84	Average of 1884-85 to 1888-89	Average of 1889-90 to 1893-94	Average of 1894-95 to 1898-99	1899-1900	
	Rs	Rs	Rs	Rs	Rs	Rs	Rs	
Imperial* . . .	63,663	67,102	80,154	87,135	84,125	82,816	96,550	
Bengal† . . .	1,11,084	2,12,024	3,55,147	3,94,347	4,04,147	5,38,652	5,45,210	
United Provinces . . .	9,63,005	8,30,709	8,38,058	9,17,898	9,40,423	9,35,078	9,42,890	
Punjab . . .	8,29,326	5,67,148	5,41,242	6,44,372	6,46,374	7,50,224	12,11,160	
Burma . . .	4,02,817	6,12,270	10,12,512	13,22,424	16,72,383	21,20,612	24,47,440	
Bihar and Orissa . . .		..			..			
Assam† . . .		88,203	1,02,460	2,11,655	2,08,159	2,86,870	3,67,140	
Central Provinces and Berar .	3,99,072	4,33,734	6,13,639	7,37,805	10,10,657	11,78,060	12,75,820	
Coorg . . .	40,684	36,591	62,248	73,007	77,016	82,146	74,220	
North-West Frontier Province .	..	..	..	..	..	..	..	
Ajmer . . .	6,197	18,002	13,197	17,020	14,061	16,722	15,350	
Baluchistan . . .			12,504	16,130	39,432	33,508	28,080	
Andamans . . .	739	481	5,120	41,108	1,76,130	1,63,428	1,40,940	
Imperial Forest College and Research Institute .			..	28,746	45,023	65,120	73,550	
Forest Surveys (Imperial) .	11,911	63,288	40,447	24,477	24,491	31,036	33,980	
Madras . . .	4,66,834	5,76,076	6,20,660	10,67,521	12,85,113	15,00,756	16,63,630	
Bombay . . .	6,48,016	8,70,487	12,61,202	18,41,812	10,00,789	10,81,692	21,28,430	
GRAND TOTAL .	30,33,430	45,76,804	56,09,670	74,26,956	80,03,352	97,96,140	1,10,24,680	
	1907-08	1908-09	1909-10.	1910-11	1911-12.	1912-13	1913-14	1914-15
	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Imperial* . . .	1,00,204	1,04,183	1,04,332	92,006	94,714	1,04,162	90,206	99,478
Bengal† . . .	7,13,391	5,83,981	5,91,000	6,13,285	7,06,374	6,60,794	6,40,157	6,70,935
United Provinces . . .	11,94,013	12,22,436	12,00,308	12,37,938	13,03,673	10,29,204	18,96,014	23,17,740
Punjab . . .	11,76,696	8,51,627	6,67,762	7,48,542	7,65,148	7,99,176	9,18,177	8,89,302
Burma . . .	36,61,532	37,17,247	36,83,618	38,42,799	41,31,162	41,38,584	42,74,001	40,60,447
Bihar and Orissa . . .			..		3,00,916	3,75,894	3,66,648	3,84,371
Assam† . . .	8,00,373	8,01,349	10,12,511	10,87,340	8,51,013	8,08,011	9,10,240	8,98,339
Central Provinces and Berar .	15,83,407	17,53,307	15,86,852	15,69,533	18,38,379	10,40,735	10,63,120	10,36,660
Coorg . . .	1,04,819	99,695	1,07,822	1,07,670	1,21,174	1,61,544	1,78,514	1,75,833
North-West Frontier Province .	88,400	81,413	77,391	72,492	89,136	1,22,173	1,31,023	1,25,539
Ajmer . . .	18,188	19,916	10,272	10,018	22,343	20,714	23,595	21,733
Baluchistan . . .	31,258	36,696	20,649	26,387	28,047	28,527	25,310	26,000
Andamans . . .	2,29,267	1,80,941	1,04,160	2,20,903	2,61,732	2,55,141	2,74,676	2,58,056
Imperial Forest College and Research Institute .	1,58,038	1,83,191	1,90,174	2,10,183	2,63,441	2,68,445	2,98,338	3,31,091
Forest Surveys (Imperial) .	27,060	39,126	41,062	41,140	38,798	35,800	37,743	42,353
Madras . . .	27,80,857	29,17,201	33,39,035	32,25,801	34,14,882	31,50,482	29,35,817	28,60,686
Bombay . . .	16,65,427	20,43,873	20,63,088	20,70,417	26,64,430	20,04,455	25,80,877	24,87,026
GRAND TOTAL .	1,45,12,913	1,47,26,034	1,40,20,654	1,52,44,023	1,60,46,560	1,72,07,810	1,75,43,455	1,82,06,460

\* Includes pay of Inspector-General of Forests, Assistant Inspector-General of Forests

† Includes figures up to 1910-11 for districts subsequently transferred to Bihar and

‡ Includes figures up to 1910-11 for Eastern Bengal districts subsequently transferred

MENT XIX—*contd.**from 1899-1900 to 1923-24 and the average of 6 quinquennial years from 1869-70 to 1898-99.*

## DITURE.

1900-01.	1901-02	1902-03.	1903-04.	1904-05	1905-06.	1906-07.	PROVINCE.
Rs.							
83,578	79,639	85,017	89,315	83,058	83,767	95,472	Imperial *
5,70,806	6,57,131	6,38,014	7,03,508	6,88,539	5,93,509	6,33,386	Bengal †
9,63,130	10,08,739	10,13,908	10,81,438	13,91,583	14,05,182	13,06,651	United Provinces
8,87,343	9,38,335	9,60,095	11,56,415	10,12,354	12,65,664	11,44,403	Punjab
26,54,717	24,46,457	28,80,263	33,52,404	34,10,024	39,38,003	36,69,753	Burma.
..	..	..	..	..	..	..	Bihar and Orissa
3,47,072	3,20,112	3,27,498	4,25,484	5,03,656	5,93,910	7,07,860	Assam ‡
11,65,866	12,00,904	12,57,288	12,80,066	13,20,615	13,07,153	13,42,898	Central Provinces and Berar
70,005	62,333	69,437	92,191	83,620	95,748	1,02,853	Coorg.
..	10,510	54,080	60,603	74,958	93,258	82,650	North-West Frontier Province.
16,782	16,927	16,377	16,680	15,641	17,131	16,716	Ajmer.
29,251	24,480	23,240	21,697	24,672	25,743	26,322	Baluchistan
1,40,137	2,04,667	2,81,702	2,86,121	3,42,431	3,35,865	2,05,136	Andamans
71,238	76,290	66,338	59,830	61,424	80,669	1,37,486	Imperial Forest College and Research Institute
33,991	33,730	33,086	33,035	28,229	30,044	30,389	Forest Survey (Imperial).
17,15,431	17,00,554	18,86,552	17,50,930	19,86,098	22,66,602	24,80,600	Madras.
24,08,581	17,10,680	16,76,441	17,76,937	19,03,604	21,26,003	19,90,183	Bombay.
1,11,00,010	1,07,10,368	1,12,40,831	1,21,06,993	1,29,67,856	1,42,38,521	1,40,63,799	GRAND TOTAL.

1915-16.	1916-17.	1917-18.	1918-19.	1919-20	1920-21.	1921-22	1922-23	1923-24	PROVINCE.
Rs	Rs	Rs	Rs.	Rs	Rs	Rs	Rs	Rs	
1,00,502	1,03,248	90,332	1,10,638	1,32,777	1,68,003	2,57,011	4,33,494	1,44,489	Imperial *
5,93,635	6,10,640	7,38,712	8,25,835	9,72,307	13,36,750	12,88,122	12,31,249	12,42,072	Bengal †
25,06,307	27,35,015	32,04,028	45,08,963	61,55,475	70,43,578	74,04,688	61,58,486	43,50,695	United Provinces.
9,23,878	9,34,602	11,58,048	17,05,804	24,10,120	35,75,740	43,76,070	49,06,871	29,16,035	Punjab.
48,86,241	49,30,588	51,87,179	66,01,982	65,38,200	73,07,014	90,83,004	99,72,119	94,17,071	Burma.
3,01,550	4,47,072	3,90,716	4,30,849	5,00,800	6,80,118	9,94,665	7,17,531	7,50,657	Bihar and Orissa
7,55,214	6,70,033	6,86,027	6,00,061	8,21,717	9,66,601	8,91,511	11,14,634	11,59,845	Assam.‡
17,34,336	17,08,775	18,72,121	20,16,548	23,70,230	27,33,601	27,15,821	30,34,417	30,41,108	Central Provinces and Berar.
1,76,033	1,80,492	1,99,941	4,25,572	5,07,647	4,66,768	6,30,645	5,86,007	5,65,508	Coorg
1,04,795	1,18,070	1,63,875	2,07,357	3,01,453	4,54,197	7,40,384	6,12,383	4,58,507	North-West Frontier Province.
25,162	20,634	20,504	28,508	47,282	37,417	41,320	39,840	49,164	Ajmer.
27,995	26,929	29,000	28,787	25,314	28,761	53,275	36,468	31,440	Baluchistan
4,30,832	4,28,652	3,97,721	6,12,826	9,71,491	13,27,030	12,87,027	8,05,184	8,96,214	Andamans
2,78,518	3,05,498	2,89,694	2,08,048	3,18,503	4,57,484	7,32,824	7,39,586	7,75,642	Imperial Forest College and Research Institute.
48,663	47,407	56,597	59,110	59,053	90,448	1,07,113	1,19,935	95,914	Forest Survey (Imperial).
20,27,318	28,42,078	30,20,349	31,82,520	36,93,348	46,30,486	51,15,356	47,80,403	46,33,826	Madras
26,42,038	28,64,681	33,53,714	78,72,197	50,18,682	53,05,022	50,23,040	40,14,344	44,01,024	Bombay.
1,85,92,607	1,87,43,883	2,11,57,063	2,88,75,605	3,17,63,100	3,61,10,907	4,08,51,878	3,93,12,041	3,49,30,281	GRAND TOTAL.

Office Establishment, and undistributable and petty local items and revenues and charges, on Indore and Bangalore. Excludes Home charges.  
Orissa  
to Bengal

## Surplus of the Forest Department throughout India for the 25 financial years

## (III) SUR

PROVINCE	Average of 1869-70 to 1873-74	Average of 1871-75 to 1878-79	Average of 1879-80 to 1883-84	Average of 1884-85 to 1888-89	Average of 1889-90 to 1893-94	Average of 1894-95 to 1898-99	Average of 1899-1900	
Imperial* . . .	—61,510	—35,365	—55,025	—71,260	—75,078	—73,128	—90,160	
Bengal† . . .	53,281	77,748	2,51,131	2,37,037	3,62,281	5,10,712	5,03,700	
United Provinces . . .	2,96,974	3,81,941	2,95,957	5,45,627	7,12,767	5,96,746	6,72,360	
Punjab . . .	1,41,403	1,48,410	1,96,090	2,67,578	2,51,013	3,89,286	1,50,310	
Burma . . .	1,91,451	6,16,896	9,75,544	11,78,891	33,06,271	44,91,000	53,64,610	
Bihar and Orissa . . .	.	.	..	..	..	..	..	
Assam‡ . . .	.	12,805	20,127	20,100	1,14,591	1,29,012	2,10,960	
Central Provinces and Berar .	3,12,807	5,16,202	6,68,453	6,73,356	6,78,848	1,97,295	21,670	
Coorg . . .	52,807	42,296	10,922	39,117	70,120	51,310	88,190	
North-West Frontier Province .	..	..	..	..	..	..	..	
Ajmer . . .	—6,132	—17,540	—8,722	—5,761	1,172	—2,560	—5,080	
Baluchistan . . .	.	..	—1,038	5,167	—21,454	—16,178	—11,620	
Andamans . . .	4,728	4,001	20,711	16,625	1,02,889	69,010	1,18,660	
Imperial Forest College and Research Institute	.	.	.	—28,319	—13,387	—62,080	—70,310	
Forest Surveys (Imperial) .	—11,911	—03,271	—40,308	—21,271	—21,823	—31,630	—33,560	
Madras . . .	1,16,409	11,413	1,85,360	2,32,960	4,20,215	6,04,292	6,18,700	
Bombay . . .	5,29,027	3,58,074	6,42,620	11,69,502	14,45,104	10,61,662	2,80,770	
GRAND TOTAL .	16,00,031	20,63,593	32,07,631	42,41,102	73,15,662	70,10,616	70,84,030	
	1907-08	1908-09.	1909-10	1910-11	1911-12	1912-13.	1913-14	1914-15
	Rs	Rs	Rs	Rs.	Rs	Rs	Rs	Rs
Imperial* . . .	—92,539	—95,904	—93,700	—63,044	—84,034	—81,325	—87,825	—87,431
Bengal† . . .	4,84,256	6,00,861	4,80,511	6,24,150	4,10,068	10,39,607	8,75,961	8,33,661
United Provinces . . .	12,15,732	9,62,070	10,91,680	11,40,501	10,53,487	10,14,689	18,16,473	8,17,495
Punjab . . .	2,80,753	4,37,165	3,04,881	4,77,410	5,41,931	1,30,657	4,35,766	5,48,703
Burma . . .	51,12,457	54,71,785	56,74,150	62,27,518	58,36,432	67,83,609	71,50,529	50,27,217
Bihar and Orissa . . .	.	.	.	1,00,207	63,061	1,30,087	1,65,408	
Assam‡ . . .	6,30,074	5,55,010	5,22,101	8,03,293	3,05,307	3,33,160	1,87,729	—63,462
Central Provinces and Berar .	7,06,721	3,24,855	4,01,488	5,24,003	7,11,475	12,25,080	12,33,324	13,33,960
Coorg . . .	1,09,037	1,21,735	1,05,307	1,08,376	1,73,096	1,20,105	1,50,713	23,404
North-West Frontier Province .	1,50,000	41,309	93,914	1,32,850	68,735	1,15,010	1,35,718	1,12,420
Ajmer . . .	11,670	7,090	4,718	13,928	4,018	6,842	10,303	0,437
Baluchistan . . .	—6,429	—13,281	—7,820	—3,175	—8,830	—8,309	—5,322	—6,942
Andamans . . .	62,553	21,077	63,318	1,89,610	2,60,426	1,04,784	1,71,135	81,102
Imperial Forest College and Research Institute	—1,51,901	—1,78,511	—1,91,265	—2,15,103	—2,67,801	—2,60,634	—2,92,532	—3,22,471
Forest Surveys (Imperial) .	—27,060	—39,126	—41,062	—41,140	—38,798	—35,809	—37,743	—42,373
Madras . . .	11,12,973	9,73,655	8,38,746	6,54,610	7,54,030	9,61,991	12,04,503	10,80,662
Bombay . . .	16,00,750	15,43,483	16,91,568	16,47,807	16,06,133	23,00,064	25,13,270	21,82,317
GRAND TOTAL .	1,13,50,045	1,07,30,765	1,11,05,140	1,21,01,431	1,21,10,793	1,60,01,909	1,57,58,090	1,15,03,334

\* Includes pay of Inspector General of Forests, Assistant Inspector-General of Forests.  
 † Includes figures up to 1910-11 for districts subsequently transferred to Bihar and Orissa.  
 ‡ Includes figures up to 1910-11 for Eastern Bengal districts subsequently transferred

MENT XIX—*concl'd.*

from 1899-1900 to 1933-4 and the average of 6 quinquennial years from 1869-70 to 1898-99.

## PLU's.

1900-01	1901-02	1902-03	1903-04	1904-05	1905-06	1906-07	Province
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
—81,115	—70,055	—81,355	—81,900	—70,290	—70,512	—95,472	Imperial *
6,62,533	6,35,106	6,18,233	3,62,015	4,78,883	5,25,033	4,32,473	Bengal †
6,02,024	7,00,709	10,11,326	11,90,008	10,05,735	10,28,216	11,90,013	United Provinces
1,63,490	5,01,223	6,26,313	5,61,382	6,62,080	5,17,080	4,00,841	Punjab
53,99,727	32,27,141	38,15,790	49,16,131	55,12,332	63,91,908	61,52,700	Burma.
	..	..	..	..	..	..	Bihar and Orissa.
2,01,549	1,83,851	2,52,701	2,50,248	3,12,021	5,12,180	6,12,732	Assam ‡
90,715	3,78,212	4,27,140	7,17,068	6,02,814	11,41,978	10,68,281	Central Provinces and Berar.
66,691	87,909	1,01,203	1,31,810	1,09,267	1,19,671	1,33,054	Coorg
	6,194	17,038	41,230	16,033	33,271	69,564	North West Frontier Province
—6,136	—9,062	—6,641	2,798	1,056	—2,120	1,620	Ajmer
—12,295	—9,764	—3,704	3,334	—2,117	—1,202	—5,127	Baluchistan.
1,37,749	62,236	41,733	1,66,260	2,78,965	2,16,526	3,11,801	Andamans
—67,541	—72,715	—63,056	—56,401	—57,887	—77,560	—1,32,907	Imperial Forest College and Research Institute
—33,571	—33,257	—30,051	—33,504	—28,220	—30,044	—30,389	Forest Survey (Imperial).
6,21,733	8,33,747	7,75,267	9,00,707	8,13,114	7,01,002	8,10,009	Madras
5,52,914	6,80,010	6,52,713	6,75,602	11,10,054	13,58,900	14,32,294	Bombay.
86,10,453	70,77,327	82,22,209	1,00,19,753	1,10,02,094	1,24,16,072	1,21,27,687	GRAND TOTAL.

1915-16	1916-17	1917-18	1918-19	1919-20	1920-21	1921-22	1922-23	1923-24	Province.
Rs.									
—50,015	—78,702	—35,612	—83,150	—1,04,250	—1,41,871	—2,20,208	—1,08,011	—1,11,034	Imperial *
5,51,975	7,19,130	6,35,257	11,18,269	10,78,930	8,18,013	6,10,837	10,70,977	10,18,843	Bengal †
11,72,521	23,05,017	20,11,769	20,38,201	13,16,179	17,36,203	12,41,089	22,14,317	30,05,384	United Provinces
8,03,105	7,53,139	6,59,728	3,58,374	14,29,758	2,20,309	6,15,102	—14,02,128	14,70,105	Punjab.
18,12,076	71,12,013	68,74,320	68,36,870	98,97,062	1,10,68,046	1,30,33,603	60,71,803	82,76,233	Burma.
1,36,177	81,309	3,62,909	5,13,911	3,10,658	2,21,484	—91,292	1,61,373	2,78,428	Bihar and Orissa
2,09,438	4,71,586	6,23,029	8,01,737	6,70,873	5,05,343	3,05,510	5,00,210	8,11,417	Assam ‡
15,43,026	18,02,403	13,94,369	11,72,871	21,70,193	16,60,025	11,17,872	16,72,562	20,03,821	Central Provinces and Berar.
2,72,522	3,26,822	2,59,792	2,62,301	4,10,481	—39,107	1,03,080	3,58,016	1,35,310	Coorg.
82,020	1,22,915	1,53,836	1,73,065	1,61,083	—2,34,418	—1,71,531	1,15,276	74,765	North-West Frontier Province
—1,707	—5,762	1,229	8,772	—12,368	10,095	—508	4,138	5,008	Ajmer.
—6,362	—8,652	—12,065	—3,670	—7,377	—6,217	—38,016	—21,620	—9,037	Baluchistan.
3,052	2,21,050	3,95,932	5,71,557	—1,70,606	—7,03,556	—7,36,920	—2,17,157	—2,81,632	Andamans.
—2,71,623	—2,97,200	—2,61,300	—2,98,965	—3,10,195	—4,11,836	—7,08,707	—5,51,823	—6,08,303	Imperial Forest College and Research Institute.
—18,063	—17,107	—56,597	—50,110	—50,053	—90,118	—1,07,113	—1,19,036	—95,044	Forest Survey (Imperial).
11,79,520	17,53,448	24,38,110	16,08,010	25,10,801	8,50,700	—2,46,185	4,83,103	7,81,731	Madras.
20,59,225	20,51,106	29,59,308	20,21,834	23,75,756	15,93,563	24,60,617	30,23,040	27,48,580	Bombay.
1,25,23,700	1,83,15,017	1,98,12,101	1,70,42,720	2,19,12,610	1,77,23,588	1,71,64,103	1,58,02,031	1,05,60,913	GRAND TOTAL.

Office Establishment, and undistributable and petty local items and revenues and charges, on Indore and Bangalore. Excludes House charges.  
Orissa.  
to Bengal.







